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Single Sampling and Double Sampling Inspection Tables

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Introduction

A CONSIDERABLE amount of attention bas been given to the application of statistical methods to problems of inspection with emphasis on means for securing certain definite advantages such as reduction in the cost of inspection, reduction in the cost of production by minimizing rejections, and the attainment of uniform quality of manufactured products.[1, 2, 3, 4] This paper presents four sets of sampling inspection tables that have contributed in a notable way to important reductions in such costs and to substantial improvements in control of quality for many characteristics of products used in the Bell System.

Whether sampling may be employed to advantage in place of 100% inspection usually depends, of course, on the purpose for wbich inspection is made. The sampling tables here presented provide definite procedures for conducting inspections that have certain immediate purposes which are described in some detail. Through their provision for instituting a "screening" inspection whenever quality falls below an acceptable level, the procedures have been found in practice to enforce a program of controlling quality in process as the alternative to high inspection costs.

General Field of Application

Tbe sampling tables presented herewith have been developed for use in consumer or producer inspections of products composed of similar individual articles or pieces, where it is desired to have assurance of a definite degree of conformance to specification requirements with a minimum of expense.

The following paragraphs indicate the general conditions under which the tables are applicable, as well as some of the assumptions involved in their development.

Acceptance Inspection of Lots—Tbe tables are intended for application in inspections whose immediate purpose is to determine the acceptability of individual lots of product.

By a lot will be meant a collection of individual pieces from a common source, possessing a common set of quality characteristics, and offered as a group for in-

spection and acceptance at one time. These pieces may be parts, partial assemblies or finished units of product. For purposes of inspection, it is desirable that a lot be composed of pieces all of which have been produced under what are judged to be the same essential conditions. To this end, an attempt should be made to avoid grouping together batches of product that are likely to differ from one another in quality, because of differences in the raw materials used, or differences in manufacturing methods or conditions. For inspections made in a manufacturing plant, particularly where production is continuous as with conveyor systems, the time element may often be the deciding factor in fixing the size of lot, and such items as convenience in handling, and stocking or shipping facilities may make it desirable to take an hour's, a half-day's, or a day's production as the quantity to be considered as a lot for inspection purposes.

Quantity Production—Maximum advantage in the use of the tables may be expected for products produced more or less continuously on a quantity basis as distinguished from those produced intermittently on a small scale.

Inspection by "Method of Attributes"—Inspection by the "method of attributes"[5] is assumed. That is, each piece inspected is examined, gauged, or tested to determine whether it does or does not conform to the requirements imposed by specification.

For some characteristics, the requirements may be expressed as numerical limits to be met by the piece, such as maximum and minimum tolerance limits for a dimension, or the minimum tolerance limit for the illumination of a lamp. For others, the requirements may be expressed in less precise terms, and inspection may consist in observing whether the piece does or does not conform to the finish, appearance, color, etc., of say a standard sample, or to the grade of workmanship commonly understood by the phrase "accepted standards of good workmanship."

Nondestructive Inspection—The tables are applicable primarily to quality characteristics that may be inspected by nondestructive means, so that at any time it is entirely practicable to inspect every piece in the lot.

This limitation is a consequence of the inspection procedure adopted in the development of the tables, wherein complete inspection of individual lots is prescribed under certain conditions.

Quality Measured by "Fraction Defective"—The yardstick of quality used in the tables is "fraction defective" (or fraction nonconforming), that is, the ratio of the number of pieces that fail to conform to a specified requirement to the total number of pieces under consideration.

A piece of product that fails to meet the requirement for a characteristic is classed as nonconforming with respect to that characteristic, and for convenience is referred to as defective. Thus, a deviation from a specified requirement or

from accepted standards of good workmanship is termed a "defect." If, in the inspection of the "end illumination" of 1000 lamps, it were found that 10 of the lamps had illumination less than the minimum value specified, and the remaining 990 had illumination equal to or greater than the minimum value, we would say that 10 defects were observed, and the lot of 1000 was 1% defective (fraction defective, $p = 0.01$).

Sampling Inspection—The tables are applicable where, under normal conditions, it will be satisfactory to inspect only a portion of the pieces in the lot and to accept the lot if the inspection results for this sample of pieces meet certain criteria. This, in effect, imposes the condition that it is not the purpose of this inspection to make sure that each piece in the lot conforms to the requirements for the characteristic inspected.

Such a situation is common, for example, in the process inspection of component parts of product units, where it may be the purpose of inspection to make reasonably certain that the quality passing on to the next stage is such that no extraordinary effort will be expended on defective parts. This situation is also common for various characteristics of finished units of product, such as some adjustment and dimensional items, items of condition, finish and workmanship that can be covered by a "surface" inspection, as well as items for which 100% inspections or tests have been made previously during process or are to be made in subsequent operations before delivery to the ultimate consumer. Characteristics, whose conformance to specified requirements is of vital importance to the functional quality of the product, and for which 100% inspection is feasible, may not of course be candidates for sampling inspection.

Acceptance Based on Observed Number of Defects—The acceptance criterion used in the tables is a stated allowable number of defects in a sample of stated size.

If only one defect is allowed in a sample of n pieces selected from a lot, then the "Allowable Defect Number" is 1 (referred to as the "Acceptance Number" in an earlier paper[3]). The criterion for the acceptance of a lot is the finding of a number of defects equal to or less than the Allowable Defect Number.

Random Samples—The theory used in the development of the tables assumes that each sample drawn from a lot is a random sample.

A random sample is one selected by a random operation,[6] such as would obtain if a number of physically similar chips, numbered to correspond to the pieces of product under consideration, were thoroughly mixed in a mixing bowl, and a number of them, equal to the desired sample size, were withdrawn to identify which pieces of product should be included in the inspection sample. When, in practice, there are indications that individual lots may be stratified in quality, it is of course best to select a "representative" sample, one such that each stratum or subportion of the lot is proportionately represented by a subsample that is selected by a random operation.

Inspection Procedures

Two distinct methods of inspection are employed—single sampling and double sampling. In single sampling, only one sample is permitted before a decision is reached regarding the disposition of the lot, and the acceptance criterion is expressed as an allowable defect number, c. In double sampling, a second sample is permitted if the first fails, and two allowable defect numbers are used—the first, c_1, applying to the observed number of defects for the first sample alone, and the second, c_2, applying to the observed number of defects for the first and second samples combined. The specific procedures assumed in the development of the tables are as follows:

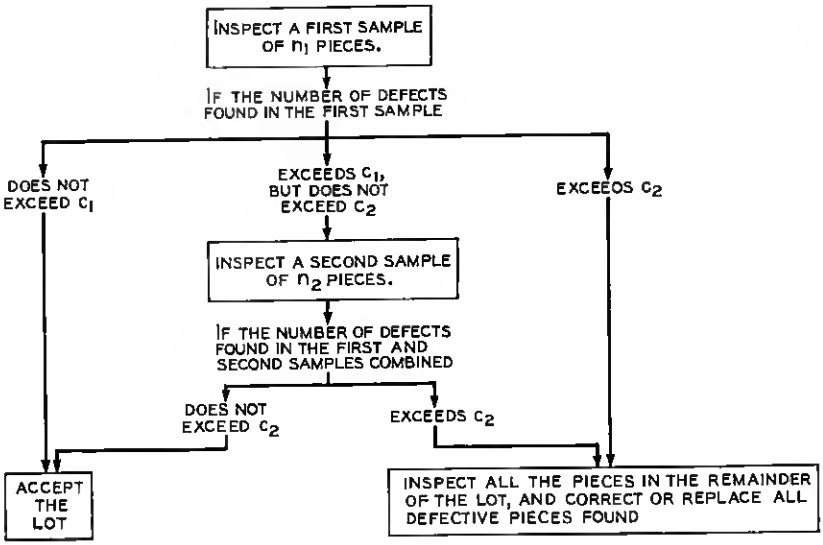

Fig. 1—Double sampling inspection procedure

Single Sampling Inspection Procedure

(a) Inspect a sample of n pieces.
(b) If the number of defects found in the sample does not exceed c, accept the lot.
(c) If the number of defects found in the sample exceeds c, inspect all the pieces in the remainder of the lot.
(d) Correct or replace all defective pieces found.

Double Sampling Inspection Procedure

(a) Inspect a first sample of n_1 pieces.
(b) If the number of defects found in the first sample does not exceed c_1, accept the lot.

(c) If the number of defects found in the first sample exceeds c_2, inspect all the pieces in the remainder of the lot.
(d) If the number of defects found in the first sample exceeds c_1 but does not exceed c_2, inspect a second sample of n_2 pieces.
(e) If the total number of defects found in the first and second samples combined does not exceed c_2, accept the lot.
(f) If the total number of defects found in the first and second samples combined exceeds c_2, inspect all the pieces in the remainder of the lot.
(g) Correct or replace all defective pieces found.

The double sampling procedure can, perhaps, be visualized more easily by reference to Fig. 1.

The theoretical development assumes that the inspection operation itself never overlooks a defect and that all defective pieces found, whether in samples or in the remainders of those lots that are inspected completely, will be corrected or replaced by conforming pieces.* Thus, lots that fail to be accepted by sample are assumed to be completely cleared of defects.

Protection and Economy Features

When a consumer† adopts sampling inspection in place of 100 per cent inspection, he forgoes the opportunity of assuring himself that each piece of product will conform to requirements, and must choose a sampling plan that will provide a degree of protection against defective material that is consistent with his needs. This choice may be narrowed down by choosing some value of allowable per cent defective, and by deciding whether this allowable value should apply to a limited quantity of product such as a lot, or to the general output comprising a more or less steady flow of lots.

Two Kinds of Consumer Protection

For both the single sampling and double sampling procedures outlined above, tables are developed for each of the following two kinds of consumer protection:

(*a*) *Lot Quality Protection*—in which there is prescribed (1) some chosen value of allowable per cent defective in a lot (Lot Tolerance Per Cent Defective), and also (2) some chosen value for the probability of accepting

* While the mathematical solution assumes correction or replacement of defective pieces, it may be expedient practically to reject defective pieces and not replace them. The effect of following this, rather than the assumed procedure, involves differences in results too small to be of any practical consequence for the small values of per cent defective covered by the tables.

† The term "consumer" is used in the general sense of the recipient of the product after the inspection has been completed. This may, of course, be the ultimate consumer or his agent. However, in a manufacturing unit, if one department produces parts for use by a subsequent assembly department, the first department may be considered as the producer and the second, the consumer.

a submitted lot that bas a per cent defective equal to the Lot Tolerance Per Cent Defective. This probability is termed the Consumer's Risk.

(*b*) *Average Quality Protection*—in which tbere is prescribed some chosen value of *average* per cent defective in the product *after inspection* (Average Outgoing Quality Limit, *AOQL*), that sball not be exceeded no matter what may be the level of per cent defective in the product submitted to the inspector.

Single sampling plans employing the first of these two types of protection were developed in an earlier paper.[3] An extension of tbe underlying theory as applied to double sampling will be given here. Sampling plans employing the second type of protection will likewise be covered for both the single sampling and double sampling procedures.*

The development of tbe second concept (*AOQL*) in 1927 was the result of a practical need in certain types of manufacturing process inspections, following considerable experience in tbe application of inspection procedures based on the first concept (Lot Tolerance and Consumer's Risk) which had been developed in 1924. Both have since been used extensively.

Minimum Amount of Inspection

For all of the four inspection plans covered, certain general principles, given in the earlier paper,[3] are used.

For each plan two requirements are imposed—first, that the plan shall provide a specified degree of protection (as covered by (a) or (b) above), and second, that the amount of inspection shall be a minimum for product of *expected* quality, subject to the degree of protection imposed by the first requirement.

The first requirement can be satisfied by a large number of different combinations of sample sizes and allowable defect numbers. The second requirement dictates wbich one of these combinations shall be chosen, and requires a determination of the value of per cent defective to be normally expected in product submitted to the inspector. This expected value is referred to as the "process average" per cent defective.

For the inspection procedures here adopted, the amount of inspection that will be done *in the long run* is made up of two parts: (1) the number of pieces inspected in the samples and (2) the number of pieces inspected in the remainder of tbose lots that fail to be accepted by sample. We are

* An adaptation of these concepts to inspection by the method of variables, using the arithmetic mean as an acceptance criterion, is given in a doctorate thesis (Columbia University) by H. G. Romig, "Allowable Average in Sampling Inspection," March 1939, for the case of a normally distributed characteristic that is statistically controlled with respect to the standard deviation.

to find a solution that will minimize the amount of inspection for uniform product* of process average quality.

In single sampling, for each combination of sample size and allowable defect number, there will be a definite probability of exceeding the allowable defect number for a sample drawn from uniform product of process average quality. This probability is termed the Producer's Risk. It represents the chance of not accepting a lot on the basis of the sample findings under these postulated conditions, and for the adopted inspection procedure is thus the chance of inspecting the remainder of the pieces in the lot. The average (expected) amount of inspection per lot then equals the number inspected in the sampled portion plus the product of the Producer's Risk and the number of pieces in the remainder of the lot. This average value can be found for each combination, and the desired solution is obtained by choosing that combination of sample size and allowable defect number for which the average amount of inspection is smallest.

In double sampling, an entirely similar procedure is followed. Here, of course, we must consider the probability of taking a second sample when the first sample fails, and then the probability of failure for the second sample. The overall chance of failure constitutes the Producer's Risk for the complete double sampling plan.

No distinction is made here as to who actually inspects the remainders of those lots that fail to be accepted by sample. Whether the consumer does this inspection, or rejects such lots and thus in effect requires the producer to do it, will be considered immaterial. Interest will be centered only on the total amount of inspection done, recognizing that no matter which agency performs this service the cost will probably be reflected in the overall cost to the consumer.

It should be noted that, in the theoretical developments, the number of defects observed in a sample is not used to "estimate" the quality of the lot. Instead, it serves to indicate what action should be taken—whether the lot should be accepted, subjected to further sampling, or inspected completely—the entire process constituting a set of operations which when repeated over and over again produce a desired end result.

Single Sampling—Lot Quality Protection

The solution for this plan was given in the earlier paper,[3] but will be reviewed briefly since certain of the principles and terms employed will be extended to the other three inspection plans.

* By "uniform product" is meant one produced under statistically controlled conditions such that the probability of producing a defective piece remains constant at some definite value p. The solution thus provides for a minimum of inspection *if* quality is statistically controlled at a per cent defective level equal to the process average per cent defective.

Protection is defined by specifying values of,

(a) Lot Tolerance Per Cent Defective, the allowable per cent defective in a lot.

(b) Consumer's Risk, the probability of accepting a lot of tolerance quality.

If the allowable defect number is c, then the Consumer's Risk is the probability of finding c or less defects in a random sample of n pieces drawn from a lot of N pieces in which the per cent defective is equal to the lot tolerance per cent defective. The tables presented are based on a Consumer's Risk of 0.10, a value found most useful in practice. For this choice, tbe chances of accepting a lot of worse than tolerance quality are less than 1 in 10.

TABLE 1

SOLUTION FOR A PARTICULAR CASE—SINGLE SAMPLING, LOT QUALITY PROTECTION

n and c Combinations for Lot Size, 1000; Lot Tol. % Def., 3%; Cons. Risk, 0.10		Application to Product having Proc. Av. % Def. = 0.45%				
Sample Size n	Allowable Defect Number, c	Prob. of Acceptance by Sample	Prob. of Inspecting Remainder of Lot (Producer's Risk)	Av. No. of Pieces Inspected per Lot		
				In Sample	In Remainder of Lot	Total
75	0	.713	.287	75	265	340
125	1	.891	.109	125	95	220
*170	*2	.*958	*.042	*170	*35	*205
210	3	.984	.016	210	13	223
250	4	.994	.006	250	5	255
290	5	.998	.002	290	1	291
325	6	.999+	.000+	325	0	325

* Plan involving minimum amount of inspection.

For each value of c, such as 0, 1, 2, etc., there is a unique value of sample size n, such that the probability of finding c or less defects is 0.10. Any of these combinations of n and c will thus provide the desired consumer protection.

Now, for a given value of process average per cent defective, one of these combinations involves a smaller total amount of inspection than any of the others, as illustrated in Table 1. This combination of n and c, which provides the desired solution, gives the most efficient adjustment between the Consumer's Risk and Producer's Risk from the standpoint of minimizing inspection effort. Fig. 2 shows the relationship between these two risks for the conditions given in Table 1.

Curves providing a basis for solutions, such as that given in Table 1, have been publisbed[3] for a Consumer's Risk of 0.10. The appended SL tables (Single Sampling Lot Quality Protection) provide for practical

use a complete set of such solutions for lot tolerance values from 0.5% to 10%. Each table is based on a particular value of lot tolerance per cent defective, and each solution, comprising a sample size, n, and allowable defect number, c, covers a range of lot sizes and a range of process average values.* The value of n given in the tables is based on the largest lot size for each lot size range, and the value of c corresponds to the mean lot size in each lot size range and to the mean value of process average in each

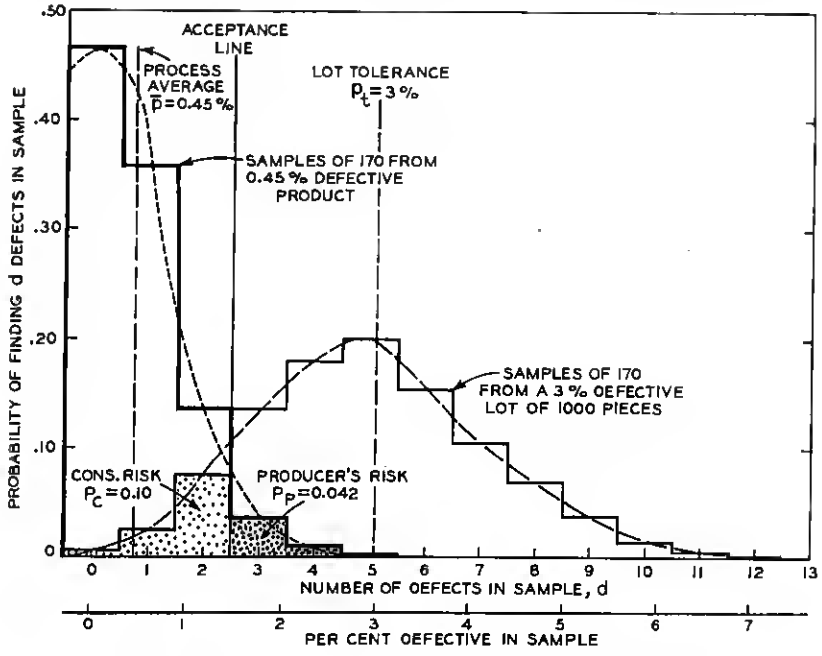

Fig. 2—Relation between consumer's risk and producer's risk

process average range, as indicated in Fig. 3. This procedure is followed for all of the sampling tables presented with this paper.

For the lot quality protection tables for both single and double sampling (SL and DL Tables), these choices are made to insure that, for the lot size range covered, the risk will not exceed the specified value (0.10) and to give *on the average*, for the process average range covered, the most economical plan. For reasons found advantageous in practice, sample sizes for samples of over 50 pieces are given to the nearest 5 units. For

* The extremely small process average range in the first column of each table has been specifically provided for those cases, increasingly common with long continued use of these inspection procedures, where the process average per cent defective is for all practical purposes zero.

extremely large samples, the size is given to the nearest 10. This basis of rounding sample sizes is followed for all of the sampling tables presented with this paper.

On each table are listed values of AOQL to indicate the upper bound to the long term average per cent defective in product after inspection that may be reached under the most adverse conditions.

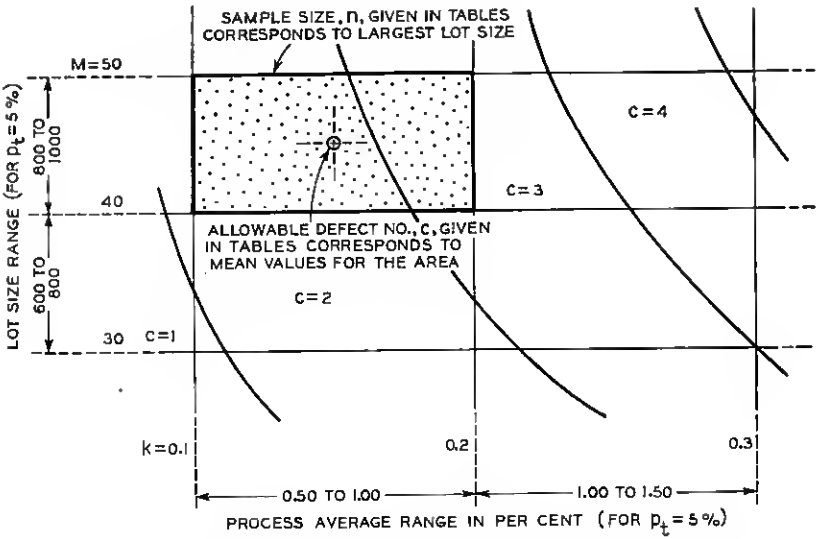

Fig. 3—Basis of choosing the n and c values given in the sampling tables

Double Sampling—Lot Quality Protection

The solution for this plan is carried out in substantially the same way as for single sampling. Protection is defined, as before, by specifying values of lot tolerance per cent defective and Consumer's Risk. As for the single sampling procedure, a Consumer's Risk value of 0.10 is adopted. In double sampling, a lot is given a second chance of acceptance if the first sample results are unfavorable, so that the Consumer's Risk is the sum of two parts: (a) the probability of accepting a lot of tolerance quality for the first sample, and (b) the probability of its acceptance for the second sample, if the first fails. For example, if the two allowable defect numbers, c_1 and c_2, are 1 and 7, respectively, the Consumer's Risk is the sum of the probabilities for all of the following possible ways in which these criteria may be met, as shown in Table 2.

As in the case of single sampling, for any given process average value there are a large number of acceptance criteria—pairs of c_1 and c_2 in this

case—for each of which sample sizes may be selected so as to give the desired Consumer's Risk of 0.10, but we wish to choose the combinations of n_1, n_2, c_1 and c_2 that will involve a minimum amount of inspection for product of process average quality. Furthermore, there are an unlimited number of ways of apportioning the Consumer's Risk between the first and second samples for each process average value. This latter factor introduces one more variable factor than will permit of a ready solution by other than trial and error methods, and accordingly an empirical choice has been made on the basis of a complete investigation of the relative practical advantages of several possible choices. Specifically, the solutions are based on an apportionment such that the risk for the first sample is equal to the risk for an independent sample equal in size to the first and second samples

TABLE 2

COMPUTATION OF CONSUMER'S RISK—DOUBLE SAMPLING

No. of Defects		Probability for $n_1 = 88$, $n_2 = 154$ 5% Defective Lot of 1000 pieces	
In 1st Sample	In 2nd Sample		
0		.010	Accepted by 1st Sample
1		.048	
2	0, 1, 2, 3, 4 or 5	.018	Accepted by 2nd Sample
3	0, 1, 2, 3 or 4	.015	
4	0, 1, 2 or 3	.007	
5	0, 1 or 2	.002	
6	0 or 1	.000	
7	0	.000	
Total.....		.100	Consumer's Risk

combined. The use of an 0.06 risk in determining n_1 and $n_1 + n_2$ for given values of c_1 and c_2 provides a Consumer's Risk of almost exactly 0.10 over a considerable portion of the field covered by the tables, though in some areas a value as low as 0.056 is necessary. The "minimum" solutions for double sampling are, of course, conditioned by this choice.*

As shown in the Appendix, paired values of c_1 and c_2 that satisfy the condition of minimum inspection depend on (1) the tolerance number of defects for a lot, and (2) the ratio of the process average to the lot tolerance

* Study of the effect of different apportionments of the Consumer's Risk on the average amount of inspection for product of process average quality indicates that considerably more than half of the 0.10 risk should be taken for small process average values and that less than half should be taken for large process average values. The single choice that was made provides a solution that closely approximates the true minimum over a large portion of the tables, and was considered justified by the great saving in computation effort. With this choice, the average amount of inspection per lot does not in general exceed the true minimum by more than 3 to 5% although for extremely low process average values the excess may be as much as 15%.

per cent defective. These values have been determined by trial and error and form the basis of the c_1 c_2 zones given in Fig. 7 of the Appendix.

The appended DL tables (Double Sampling Lot Quality Protection) provide a complete set of solutions using paired values of c_1 and c_2 determined from Fig. 7. These tables are constructed on the same principles as the single sampling tables described above.

Single Sampling—Average Quality Protection

The solution for this plan considers the degree to which the entire inspection procedure screens out defects in the product submitted to the inspector. Lots accepted by sample undergo a partial screening through the elimination of defects found in samples. Lots that fail to be accepted

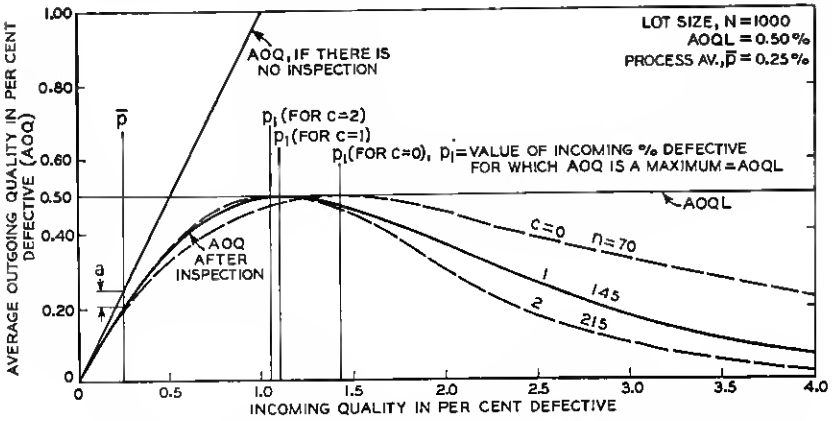

Fig. 4—Relationship between incoming quality, outgoing quality and *AOQL*

by sample are completely cleared of defects. The overall result is some average per cent defective in the product as it leaves the inspector, termed the "average outgoing quality," which depends on the level of per cent defective for incoming product and the proportion of total defects that are screened out.

The solid curve of Fig. 4 shows how the average outgoing quality varies for different values of incoming quality for a lot size of $N = 1000$, a sample size of $n = 145$ and an allowable defect number of $c = 1$. The curve is based on the concept of incoming product of uniform quality treated mathematically as an homogeneous universe. As the level of incoming per cent defective gets higher and higher, more and more lots are completely inspected. In turn, the average outgoing per cent defective increases, reaches a maximum value (0.50%, in Fig. 4), and then falls off as a result of rapid increase in the amount of screening. This maximum value is termed the average outgoing quality limit (AOQL).

For this plan, protection is defined by specifying a definite value of AOQL. For each possible value of c such as 0, 1, 2, etc. there is a unique value of sample size that will give the specified value of AOQL. This is illustrated in Fig. 4. Any of these combinations of n and c provide the desired protection, and as for the lot quality protection plans, we choose that combination of n and c that gives a minimum amount of inspection for uniform product of process average quality.

In the Appendix it is shown that the allowable defect number satisfying the condition of minimum inspection is dependent on two factors (1) the number of defects per lot for process average quality, and (2) the ratio of the process average per cent defective to the AOQL value. Fig. 9 of the Appendix defines zones of allowable defect numbers for which the average amount of inspection is a minimum.

The appended SA tables (Single Sampling Average Quality Protection) provide a complete set of minimum inspection solutions for AOQL values from 0.1% to 10%. The choice of n and c for each solution in the tables is based on the procedure of Fig. 3 (using c zones given by Fig. 9), to insure that the AOQL value over the area in question will not exceed the specified value and to give on the average for this area the most economical plan.

On each table are given values of lot tolerance per cent defective for a Consumer's Risk of 10%. These values are found useful in practice since it is often desirable to know the degree of protection afforded to individual lots.

Double Sampling—Average Quality Protection

The solution for double sampling differs from that for single sampling in that no simple relation has been found that gives directly the sample sizes that will result in a specified value of AOQL for a given lot size. This, together with the lack of simple relations for determining the choice of allowable defect numbers (c_1 and c_2) that provide a minimum solution, has necessitated an empirical choice, the consequence of which is much the same as for the similar action taken in the solution of the problem of double sampling for lot quality protection.* Specifically, the interrelationship between n_1, n_2, c_1 and c_2 used in the latter case for a 10% Consumer's Risk is used again here and the solutions given are consequently minima that are contingent on this choice. An extensive trial and error investigation, using the underlying theoretical relations, leads to the conclusion that the degree to which the solutions given in these tables approach the true minima, is of the same order of magnitude as for the double sampling tables for lot quality protection.

The method of solution is essentially that illustrated by example in the

* See footnote page 11.

Appendix. The pairs of values of c_1 and c_2 used in the solution are confined to those given in Fig. 7 of the Appendix. For each of these pairs of c_1 and c_2, sample sizes are determined, using the above mentioned relationship to a 10% Consumer's Risk, that will give the desired AOQL value. Of these several sets of c_1, c_2, n_1 and n_2, that one is selected which involves the least amount of inspection.

The appended DA tables (Double Sampling Average Quality Protection) provide a complete set of such minimum inspection solutions for AOQL values from 0.1% to 10%. Tbe choice of n_1, n_2, c_1 and c_2 for each solution in the tables is based on the general procedure of Fig. 3 (using the zones given in Fig. 7) to insure that the AOQL value over the area in question will not exceed the specified value and to give on the average for this area the most economical plan.

As for the single sampling AOQL tables there are listed values of lot tolerance per cent defective for a Consumer's Risk of 10%. In this case, these values have entered directly into the solution as explained above.

Application of Sampling Tables

In the above description of the sampling tables, attention has been confined to the inspection of a single characteristic. The tables are, however, equally applicable to a group of characteristics considered collectively provided defects with respect to these characteristics are of essentially the same seriousness and may, therefore, be considered additive. When such application is made, the per cent defective values given in the tables embrace all such defects collectively, and since more than one defect may occur on a single piece of product, any allowable defect number listed in the tables should, by agreement, be considered either as a "number of defective pieces" or as a "number of defects."

The sampling tables based on lot quality protection (Tables SL and DL) are perbaps best adapted to conditions where interest centers on each lot separately—for example, where tbe individual lot tends to retain its identity either from a shipment or a service standpoint. They have been found particularly useful in inspections made by the ultimate consumer or his purchasing agent for lots or sbipments purchased more or less intermittently.

The sampling tables based on average quality protection (Tables SA and DA) are especially adapted for use where interest centers on the *average* quality of product after inspection rather than on the quality of each individual lot and where inspection is, therefore, intended to serve, if necessary, as a partial screen for defective pieces. The latter point of view has been found particularly helpful, for example, in consumer inspections of continuing purchases of large quantities of a product, and in manufacturing

process inspections of parts where the inspection lots tend to lose their identity by merger in a common storeroom from which quantities are withdrawn on order as needed.

Other things being equal the average amount of inspection for double sampling is less than for single sampling. Fig. 5* gives a direct comparison for the lot protection tables (SL and DL). The saving obtained by using double instead of single sampling is greatest for large lot sizes and low process averages. Over the area of the tables found most useful in practice (per-

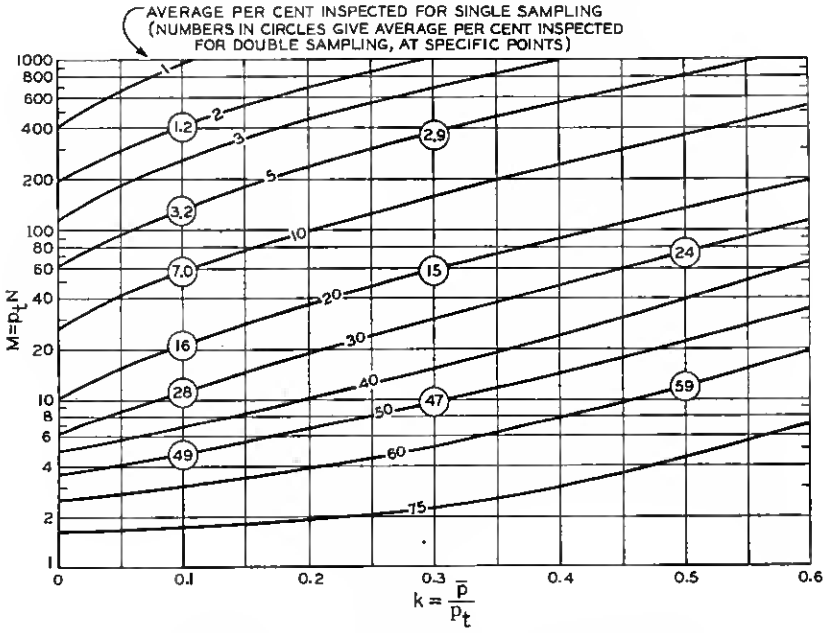

Fig. 5—Relative amount of inspection, double and single sampling

centage inspection less than 25 or 30%), the saving generally exceeds 10% and may be as great as 50%. The saving that results from using the double sampling instead of the single sampling AOQL tables (SA and DA) is of the same order of magnitude and may be estimated roughly from Fig. 5 by using the associated lot tolerance values listed in the AOQL tables, for a chosen set of AOQL, lot size, and process average values. While the amount of inspection is a major cost item, other costs associated with double

* The curves and figures on this chart should be regarded as approximate. The mathematical relations involved are such that there exist unique values to be plotted on the M–k plane when certain approximate probability equations, referred to in the appendix, are employed in the solution, but not when exact equations are employed.

sampling frequently throw tbe advantage to single sampling. Among tbe added costs are those associated with interruption of work, extra handling of product, etc. incidental to the selection of an independent second sample. Aside from these considerations, it is common to find a psychological preference for double sampling. This appears to be associated with the tendency to look with favor on any plan that permits a "second chance" to make good, particularly when an initial failure is of a marginal character.

Given a specific problem of replacing 100% screening inspection by a sampling inspection, the first step is to decide on the type of protection desired, to select the desired limit of per cent defective—lot tolerance or AOQL value—for that type of protection, and to choose between single and double sampling. This results in the selection of one of tbe appended tables. The second step is to determine whether the quality of product is good enough to warrant the introduction of sampling. The economies of sampling will be realized, of course, only insofar as the per cent defective in submitted product is such that the acceptance criteria of the selected sampling plan will be met. A statistical analysis of past inspection results should first be made, therefore, in order to determine existing levels and fluctuations in the per cent defective for the characteristic or the group of characteristics under consideration. This provides information with respect to the degree of control of quality as well as the usual level of per cent defective to be expected under existing conditions. From this and other information is to be determined a value for the "process average" per cent defective that should be used in applying the selected sampling table, if sampling is to be introduced.

The determination of the process average per cent defective is an engineering problem, essentially one of prediction, in which use is made of all available information—knowledge of manufacturing conditions past and anticipated, judgment as to what periods of the past, if any, may be taken as representative of the future, results of analyses showing uniformity and level of per cent defective for sucb past periods, etc. The application of "control chart" analysis[1,7] to past data is especially recommended.* If

* The following procedure has been used witb general success. Tabulate the observed values of fraction defective, p, for at least 25 immediately preceding lots (or groups of lots, say by days or weeks, if p is very small), excluding lots that are nonrepresentative for known reasons, and apply the control chart test to the observed values of p. If the data show statistical control, and if there are grounds for believing that future manufacturing conditions will be essentially tbe same as those of the past, use the average of the observed values of p as the process average value, $\bar{p}$. If lack of statistical control is shown, replace values of p that are beyond $\pm 3\sigma$ control limits[1, 7] by values corresponding to $\pm 2\sigma$ control limits (where $\sigma = \sqrt{\bar{p}\,(1 - \bar{p})/n}$). Compute a corrected average value of p, in which the individually corrected values are used in place of the corresponding observed values. Unless other conflicting evidence predominates, use this corrected value as a tentative process average value, until such time as a revision appears warranted on the basis of new evidence.

the process average value thus determined is well within the range of process average values listed in the selected sampling table then sampling can advantageously be introduced. If it is beyond this range, it would be quite satisfactory from a protection standpoint to use the last process average column of the selected table but the sampling plan itself would force rejection or a screening inspection of such a large proportion of the lots that the introduction of sampling probably would not pay. If the process average value is but poorly estimated, the amount of inspection will be somewhat larger than need be but the specified degree of protection will still be realized. Where there is uncertainty it is better to overestimate than to underestimate the process average value since, for a given magnitude of error, a lesser amount of excess inspection will thereby be incurred.

It should be especially noted that the tables may be safely applied whether quality is well controlled or not. If, for example, the usual level of per cent defective is well within the range of process average values listed in the selected table but individual lots are frequently well outside this range, the sampling plan will usually permit acceptance by sampling while quality is good but force 100% inspection when it is bad.

Experience with the tables indicates that where the procedures are used by a manufacturer within his own organization or by a consumer who rejects lots that are not accepted by sample, the general plan forces corrective action whenever quality becomes poorer than normally expected. The attendant increase in overall inspection costs provides a compelling argument, in a language well understood by all, for determining the cause of trouble in the manufacturing process and for instituting measures for eliminating it as speedily as possible. Thus, while the inspection procedures have as their immediate purpose the provision of a curative technique whereby product already made is cleared of abnormal proportions of defects, they are found by experience to enforce the adoption of a preventive technique—one that exerts economic pressure to track down and remove causes of abnormal quality variations, thus enforcing control of quality in the process and assuring better health in the product of tomorrow. Because of these factors the long term average outgoing per cent defective may rarely be expected to exceed half the AOQL value associated with the inspection plan in use.

Quality control is achieved most efficiently, of course, not by the inspection operation itself but by getting at causes.[6] It may be expedited by carrying out regular statistical control analyses of the cumulative results of sampling inspection—preparing quality control charts[1,7] for "per cent defective" with subgrouping of results on a lot-by-lot, a day-by-day, or a week-by-week basis—and making the findings available to those directly responsible for manufacturing processes.

Where a steady supply of product is offered for acceptance on a lot-by-lot basis, the use of these sampling procedures and tables, together with continuing control chart analyses of the inspection results obtained therefrom, have been found to provide a balanced and economical inspection program.

ACKNOWLEDGMENT

Work underlying the development and application of these tables has been contributed by many individuals in the Bell Telephone Laboratories and the Western Electric Company. The authors here express their indebtedness to these associates, particularly to those in the Western Electric Company who cooperated in the early development of the technical features of the plans and worked out shop procedures for use in their application. The laborious work of computing and preparing the tables in their final form was carried out by Miss Mary N. Torrey and Miss Ruth A. Bender—we wish to express our appeciation to them for their efforts to make the tables as free from error as possible.

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MATHEMATICAL APPENDIX

Fundamental Probability Formulas

The mathematical probabilities used in the solutions are based on equations corresponding to one or the other of the following two sets of conditions:

(a) Sampling from a finite universe.

(b) Sampling from an infinite universe.

In relations involving the determination of the Consumer's Risk, the sample is considered as a sample from a lot of a finite number of pieces and probabilities are correspondingly based on (a). For all other relations in the solutions—involving the determination of the Producer's Risk, the determination of the average number of pieces inspected per lot, etc.— the sample is considered as a

sample from the general output of product—a source of supply—and probabilities are correspondingly based on (b).

Finite Universe

The probability of finding m defects in a random sample of n units drawn from a finite universe (lot) of N pieces in which the number of defects is $M = pN$, is given exactly hy

$$P_{m,n,N,M} = \frac{1}{C_n^N} C_{n-m}^{N-M} C_m^M. \tag{1}$$

When $p < 0.10$, a good approximation to (1) is given by the m + 1st term of the expansion of the binomial, $\left[\left(1 - \frac{n}{N}\right) + \frac{n}{N}\right]^M$,

$$P_{m,n,N,M} \simeq P_{m,\frac{n}{N},M} = C_m^M \left(1 - \frac{n}{N}\right)^{M-m} \left(\frac{n}{N}\right)^m. \tag{1'}$$

When $p < 0.10$ and when $\frac{n}{N} < 0.10$, a good approximation to (1) is given hy the m + 1st term of the Poisson exponential distrihution,

$$P_{m,n,N,M} \simeq P_{m,pn} = \frac{e^{-pn}(pn)^m}{m!}. \tag{1''}$$

These are general equations applicable for any fraction defective, p, but are used in this paper only for the specific case where $p = p_t$, the lot tolerance fraction defective, and where in turn $M = p_t N$.

The Consumer's Risk P_C, is the probability of meeting the acceptance criteria—c, for single sampling, and c_1 and c_2, for double sampling—in samples drawn from a lot of N pieces containing exactly the tolerance number of defects $M = p_t N$.

For single sampling,

$$P_C = \sum_{m=0}^{m=c} P_{m,n,N,M} \quad (\text{when } p = p_t). \tag{2}$$

For double sampling,

$$P_C = \sum_{m=0}^{m=c_1} P_{m,n_1,N,M} + P_{c_1+1,n_1,N,M} \sum_{m=0}^{m=c_2-c_1-1} P_{m,n_2,N-n_1,M-c_1-1}$$
$$+ P_{c_1+2,n_1,N,M} \sum_{m=0}^{m=c_2-c_1-2} P_{m,n_2,N-n_1,M-c_1-2} + \cdots$$
$$+ P_{c_2,n_1,N,M} P_{0,n_2,N-n_1,M-c_2} \quad (\text{when } p = p_t). \tag{3}$$

Values of P_C in equations (2) and (3) are given approximately by substituting $P_{m,\frac{n}{N},M}$ or $P_{m,pn}$ for $P_{m,n,N,M}$ throughout, in accordance with equations (1′) and (1″), using $p = p_t$. The resulting equations will he referred to as (2′), (2″), (3′) and (3″), respectively. (2′) (2″) (3′) (3″)

Infinite Universe

The probability of finding m defects in a random sample of n pieces drawn from an infinite universe (general output of uniform product) in which the fraction defective is p, is given exactly by the m + 1st term of the expansion of the binomial, $[(1 - p) + p]^n$,

$$P_{m,n,p} = C_m^n (1 - p)^{n-m} p^m. \tag{4}$$

When $p < 0.10$, a good approximation to (4) is given by the m + 1st term of the Poisson exponential distribution,

$$P_{m,n,p} \simeq P_{m,pn} = \frac{e^{-pn}(pn)^m}{m!}. \tag{4'}$$

The probability of meeting the acceptance criteria—c, for single sampling, and c_1 and c_2 for double sampling—in samples drawn from submitted product having a fraction defective of p, is termed the probability of acceptance, P_a. For single sampling,

$$P_a = \sum_{m=0}^{m=c} P_{m,n,p}. \tag{5}$$

For double sampling,

$$P_a = \sum_{m=0}^{m=c_1} P_{m,n_1,p} + P_{c_1+1,n_1,p} \sum_{m=0}^{m=c_2-c_1-1} P_{m,n_2,p} + P_{c_1+2,n_1,p} \sum_{m=0}^{m=c_2-c_1-2} P_{m,n_2,p} + \cdots + P_{c_2,n_1,p} P_{0,n_2,p}. \tag{6}$$

Values of P_a in equations (5) and (6) are given approximately by substituting Poisson exponential probabilities, $P_{m,pn}$, for $P_{m,n,p}$ throughout in accordance with equation (4'). The resulting equations will be referred to as equations (5') and (6'), respectively. (5') (6')

The Poisson exponential approximation is used in subsequent paragraphs wherever probabilities in sampling from an infinite universe apply. Tables[8] and charts[9, 10] are available from which these probability values (single term values, or cumulative values for "c or less defects") may be read directly.* Figure 6 gives a cumulative probability chart for the Poisson exponential distribution, which is widely useful in the solutions involved.

The Producer's Risk, P_P, is the probability of failing to meet the acceptance criteria in samples drawn from product of process average ($\bar{p}$) quality. Using $p = \bar{p}$ in equations (5) and (6),

$$P_P = 1 - P_a \text{ (when } p = \bar{p}). \tag{7}$$

Lot Quality Protection

Single Sampling

Given: Lot Size (N), lot tolerance fraction defective (p_t), Consumer's Risk ($P_C = 0.10$), process average fraction defective ($\bar{p}$).

* In this work use was made of more complete tables, giving cumulative probabilities for pn values up to 100, prepared by Office of the Switching Theory Engineer, Bell Telephone Laboratories.

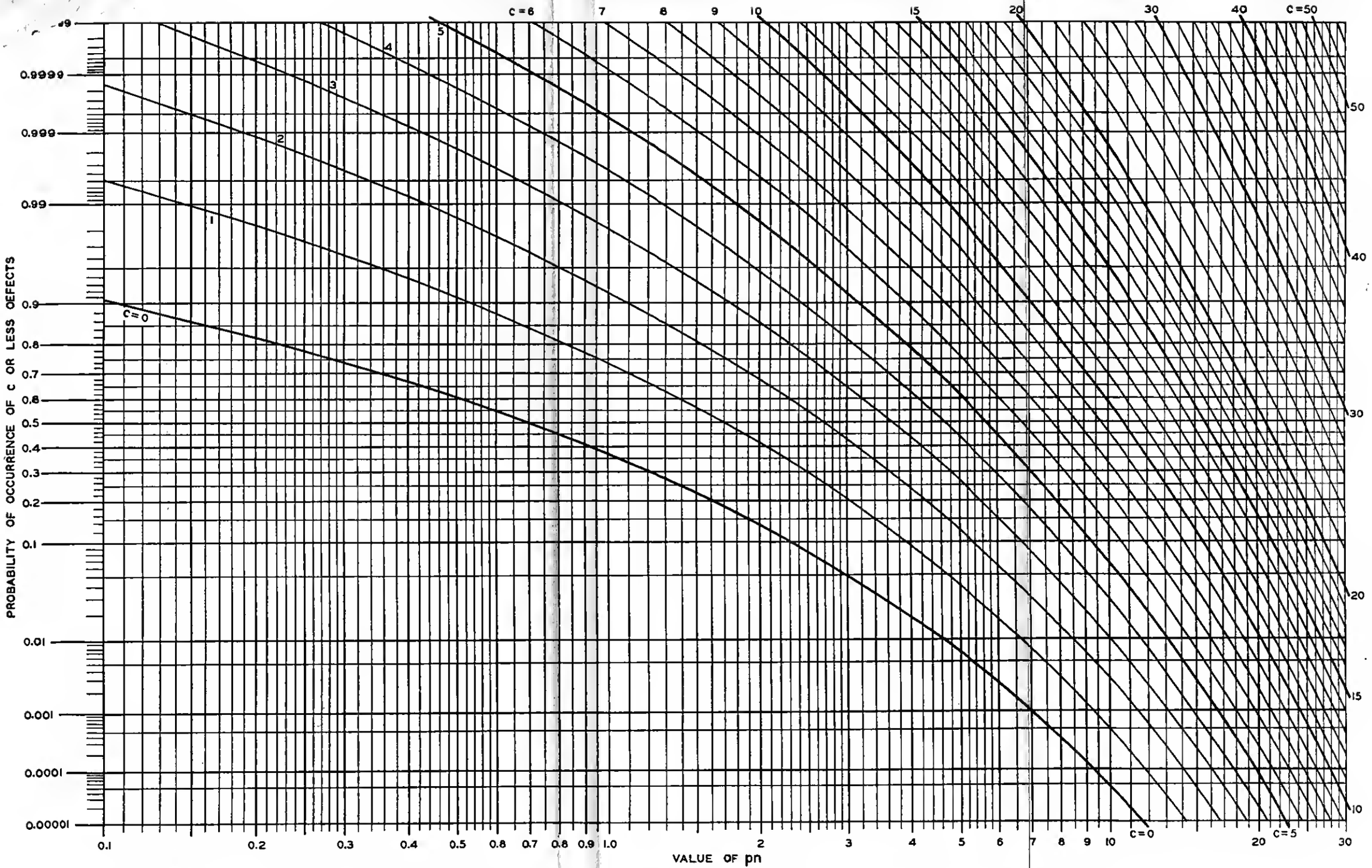

Fig. 6—Cumulative probability curves—Poisson exponential. For determining probability of occurrence of c or less defects in a sample of n pieces selected from an infinite universe in which the fraction defective is p (A modification of chart given by Miss F. Thorndike *B. S. T. J.*, October 1926).

To find: Values of n and c that will minimize $\bar{I}$, the average number of pieces inspected per lot for product of process average ($\bar{p}$) quality.

The average number of pieces inspected per lot (I) for product of p quality is given by

$$I = n + (N - n)(1 - P_a), \tag{8}$$

where P_a is given by equation (5). Substituting the approximation of equation (5′) gives

$$I = n + (N - n)\left(1 - \sum_{m=0}^{m=c} P_{m,pn}\right). \tag{8′}$$

$\bar{I}$ is a specific value of I and is obtained from equation (8′) by using $p = \bar{p}$. The value of c that makes $\bar{I}$ a minimum may be read from the chart of Fig. 2 of the previous paper,[3] which uses coordinates of $M = p_t N$ and $k = \dfrac{\bar{p}}{p_t}$ and is based on $P_C = 0.10$. The corresponding sample size n may be read from Fig. 3 of the previous paper[3] (based on equation (2′)), from Fig. 6 if appropriate, or by direct computation from equation (2), (2′), or (2″), using $P_C = 0.10$.

Double Sampling

Given: Lot size (N), lot tolerance fraction defective (p_t), Consumer's Risk ($P_C = 0.10$), process average fraction defective ($\bar{p}$).

To find: Values of n_1, n_2, c_1, c_2 that will minimize $\bar{I}$.

The average number of pieces inspected per lot (I) for product of p quality is given by

$$I = n_1 + n_2\left(1 - \sum_{m=0}^{m=c_1} P_{m,pn_1}\right) + (N - n_1 - n_2)(1 - P_a), \tag{9}$$

where P_a is determined from equation (6′).

$\bar{I}$ is a specific value of I and is obtained from equation (9) by using $p = \bar{p}$. As outlined on page 11, the pair of values of c_1 and c_2 that makes $\bar{I}$ a minimum is determined by trial and error, conditioned by the choice that the Consumer's Risk of 0.10 be divided between the first and second samples so that the "initial risk" for the first sample is 0.06. Figure 7 gives such pairs of c_1, c_2 values, corresponding to values $M = p_t N$ and $k = \dfrac{\bar{p}}{p_t}$.

For the selected apportionment of Consumer's Risk, the sample sizes n_1 and n_2 may be determined approximately from the following equations, which are based on equation (1′),

$$\left.\begin{aligned} 0.06 &= \sum_{m=0}^{m=c_1} C_m^M \left(1 - \frac{n_1}{N}\right)^{M-m} \left(\frac{n_1}{N}\right)^m, \\ 0.06 &= \sum_{m=0}^{m=c_2} C_m^M \left(1 - \frac{n_1 + n_2}{N}\right)^{M-m} \left(\frac{n_1 + n_2}{N}\right)^m. \end{aligned}\right\} \tag{10}$$

Figure 8 based on these equations gives $p_t n_1$ and $p_t(n_1 + n_2)$ values associated with c_1 and c_2 for a given value of $M = p_t N$, and thus provides the desired values of n_1 and n_2.

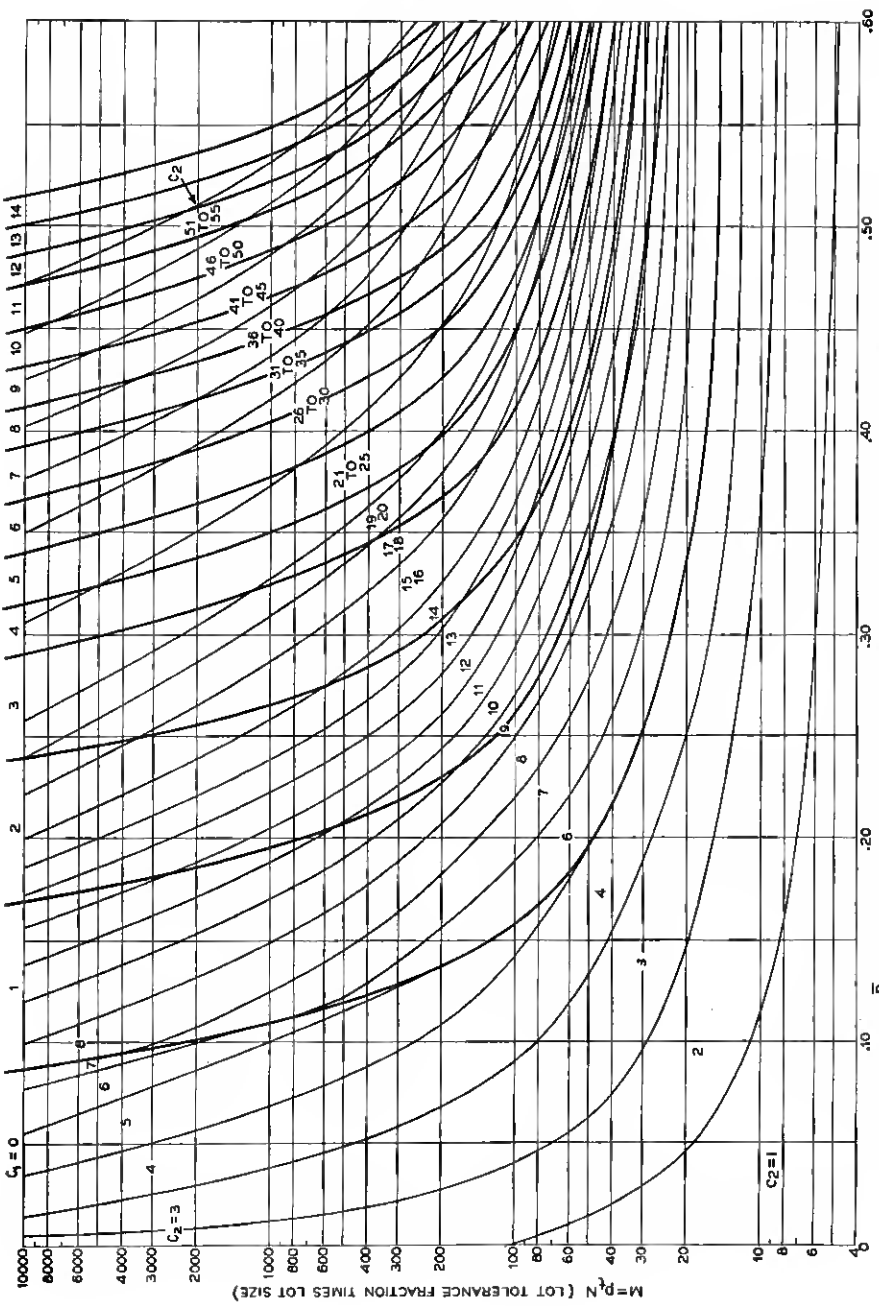

Fig. 7—Chart for determining allowable defect numbers, c_1 and c_2—lot tolerance protection, Consumer's Risk 0.10

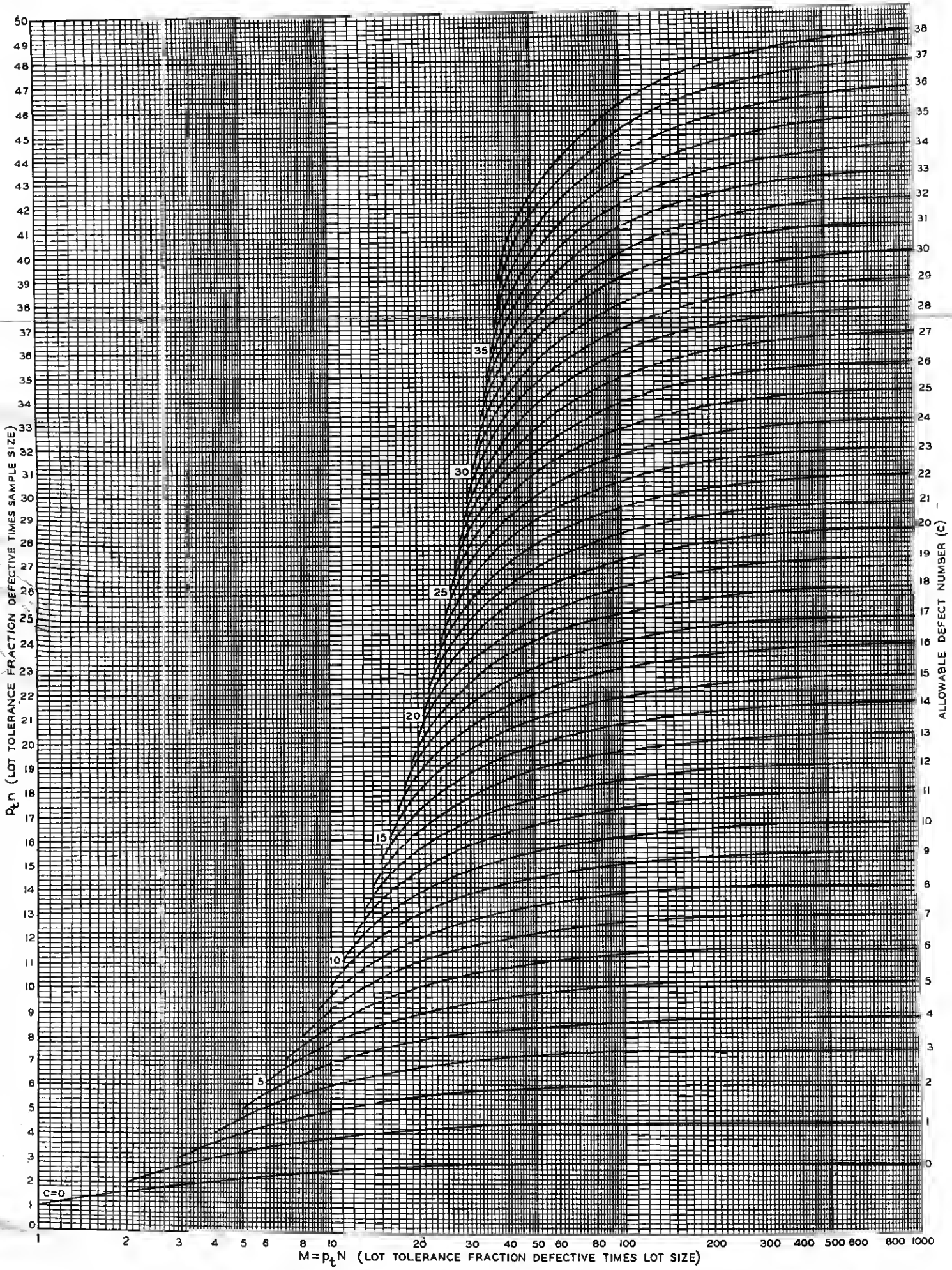

Fig. 8—Curves for determining sample sizes, n_1 and n_2—lot tolerance protection, Consumer's Risk, 0.10.

The use of $P = 0.06$ for determining $n_1 + n_2$ corresponding to c_2 as well as for determining n_1 corresponding to c_1 results in a Consumer's Risk of approximately 0.10, as may be checked by writing the Consumer's Risk equation (3) as follows:

$$P_C = \sum_{m=0}^{m=c_1} P_{m,n_1,N,M} + \sum_{m=0}^{m=c_2} P_{m,n_1+n_2,N,M} - \left(P_{0,n_1,N,M} \sum_{m=0}^{m=c_2} P_{m,n_2,N-n_1,M} + P_{1,n_1,N,M} \sum_{m=0}^{m=c_2-1} P_{m,n_2,N-n_1,M-1} + \cdots + P_{c_1,n_1,N,M} \sum_{m=0}^{m=c_2-c_1} P_{m,n_2,N-n_1,M-c_1} \right). \quad (11)$$

The sum of the first two terms is 0.12 and the sum of the terms in parentheses is of the order of 0.02.

Average Quality Protection

General Relations

When the fraction defective in submitted product is p, the average quality after inspection (p_A) is given by

$$p_A = p \frac{N - I}{N} \quad (12)$$

when all defective pieces found are replaced. If defective pieces found are removed but not replaced,

$$p_A = p \frac{N - I}{N - pI}, \quad (12')$$

the factor pI representing the average number of defective pieces removed. In deriving the tables, equation (12) has been used. The error in p_A resulting from the use of (12) rather than (12′) is $\frac{pI}{N}$, which is generally small.

The average outgoing quality limit (p_L) is the maximum value of p_A that will result under any sampling plan, considering all possible values of p in the submitted product. The value of p for which this maximum value of p_A occurs is designated as p_1, hence

$$p_L = p_1 \frac{N - I}{N}. \quad (13)$$

The value of p_1 for which $p_A = p_L$ may be determined by differentiating equation (12) with respect to p, equating to 0, and solving for p, that is

$$\frac{dp_A}{dp} = \frac{N - I}{N} - \frac{p}{N} \frac{dI}{dp} = 0. \quad (14)$$

Single Sampling

Given: Lot size (N), *AOQL* (p_L), process average fraction defective ($\bar{p}$).
To find: Values of n and c that will minimize $\bar{I}$.

The average quality after inspection (p_A), after substituting in equation (12) the value of I given in equation (8′), is obtained from the relation

$$p_A = p\frac{(N-n)}{N}\sum_{m=0}^{m=c}\frac{e^{-pn}(pn)^m}{m!}. \tag{15}$$

Differentiating with respect to p in accordance with equation (14) gives,

$$\frac{dp_A}{dp} = \frac{(N-n)}{N}\left[\sum_{m=0}^{m=c}\frac{e^{-pn}(pn)^m}{m!} - \frac{e^{-pn}(pn)^{c+1}}{c!}\right]. \tag{16}$$

Equating to zero and solving for p, gives the value of $p = p_1$ that makes p_A a maximum; i.e., $p_A = p_L$.

Let $p_1 n = x$; the particular case covered by equation (15) where $p = p_1$, and $p_A = p_L$ may then be expressed as

$$p_L = \frac{N-n}{Nn}\,x\sum_{m=0}^{m=c}\frac{e^{-x}x^m}{m!}, \tag{17}$$

or

$$p_L = y\left(\frac{1}{n} - \frac{1}{N}\right), \tag{18}$$

where

$$y = x\sum_{m=0}^{m=c}\frac{e^{-x}x^m}{m!}. \tag{19}$$

Similarly, equation (16) equated to zero becomes, after substituting $p_1 n = x$ and simplifying,

$$\sum_{m=0}^{m=c}\frac{e^{-x}x^m}{m!} - \frac{e^{-x}x^{c+1}}{c!} = 0. \tag{20}$$

Substituting in equation (19) the second term of equation (20) for the summation term gives

$$y = \frac{e^{-x}x^{c+2}}{c!}. \tag{21}$$

These relations* provide a basis for determining the values of x and y, corresponding to specific values of c, listed in Table A. The values of x for $c = 0$ to 30 were determined from equation (20) using Newton's Method of Approximation. The values of x for $c = 31$ to 40 were estimated on the basis of successive differences. The listed values of y are averages of the two values determined from equations (19) and (21), which differ slightly because values of x were determined to only two decimal places.

* Reduction of the mathematical relations to this simplified form and the determination of several x and y values, were contributed by Dr. Walter Bartky of the University of Chicago (when he was associated with the Western Electric Co.) shortly after the development of the *AOQL* concept and the preparation of preliminary *AOQL* double sampling tables. The methods and work of computing the values in Table A were contributed by Mr. George C. Campbell, formerly of the Bell Telephone Laboratories.

TABLE A

VALUES OF x AND y FOR GIVEN VALUES OF c

Used in equation (18) for determining p_L when N, n and c are given, or in equation (22) for determining n when N, c and p_L are given

c =	0	1	2	3	4	5	6	7	8	9	10
x =	1.00	1.62	2.27	2.95	3.64	4.35	5.07	5.80	6.56	7.30	8.06
y =	0.3679	0.8408	1.372	1.946	2.544	3.172	3.810	4.465	5.150	5.836	6.535
c =	11	12	13	14	15	16	17	18	19	20	
x =	8.82	9.59	10.37	11.15	11.93	12.72	13.52	14.32	15.12	15.92	
y =	7.234	7.948	8.677	9.404	10.12	10.87	11.63	12.38	13.14	13.88	
c =	21	22	23	24	25	26	27	28	29	30	
x =	16.73	17.54	18.35	19.17	19.98	20.81	21.63	22.46	23.29	24.13	
y =	14.66	15.42	16.18	16.97	17.73	18.54	19.30	20.11	20.91	21.75	
c =	31	32	33	34	35	36	37	38	39	40	
x =	24.96	25.81	26.65	27.50	28.35	29.21	30.06	30.93	31.79	32.66	
y =	22.54	23.40	24.22	25.08	25.94	26.83	27.68	28.62	29.50	30.44	

The value of c that minimizes $\bar{I}$ (equation (8'), using $p = \bar{p}$), is given directly by Fig. 9, which uses coordinates of $\bar{M} = \bar{p}N$ and $\bar{k} = \bar{p}/p_L$. The curves bounding the c zones on Fig. 9 were obtained directly from relations between equations (18) and (8'), using $p = \bar{p}$, that define values of $\bar{M}$ and $\bar{k}$ such that $\bar{I}$ is the same for c and $c + 1$.

The value of n, corresponding to tbe value of c given on Fig. 9, is determined from equation (18), expressed as

$$n = \frac{yN}{p_L N + y}. \tag{22}$$

Example: Given: $N = 750$, $p_L = 0.01$, $\bar{p} = 0.004$.
To Find: n and c.

Solution: $\bar{M} = \bar{p}N = (0.004)\ (750) = 3$; $\bar{k} = \dfrac{\bar{p}}{p_L} = \dfrac{0.004}{0.01} = 0.4$.

Consulting Fig. 9, for $\bar{M} = 3$ and $\bar{k} = 0.4$, read $c = 1$.
From Table A, for $c = 1$, read $y = 0.8408$.

From equation (22), $n = \dfrac{(0.8408)\ (750)}{(0.01)\ (750) + 0.8408} = 75.6$.

Sampling Plan: $n = 76$, $c = 1$.

Double Sampling

Given: Lot Size (N), *AOQL* (p_L), process average fraction defective ($\bar{p}$).
To find: Values of n_1, n_2, c_1 and c_2 that will minimize $\bar{I}$.

The average quality after inspection (p_A) is found by substituting in equation (12), the value of I given in equation (9).

$$p_A = \frac{p}{N}\left[(N - n_1)\sum_{m=0}^{m=c_1} P_{m,pn_1} + (N - n_1 - n_2)\left(P_{c_1+1,pn_1}\sum_{m=0}^{m=c_2-c_1-1} P_{m,pn_2} + \cdots + P_{c_2,pn_1}P_{0,pn_2}\right)\right]. \tag{23}$$

Differentiating equation (23) with respect to p and equating to 0, in accordance with equation (14), and solving for p, gives the value of $p = p_1$ that makes p_A a maximum; i.e., $p_A = p_L$. The resulting equation is not reproduced here since

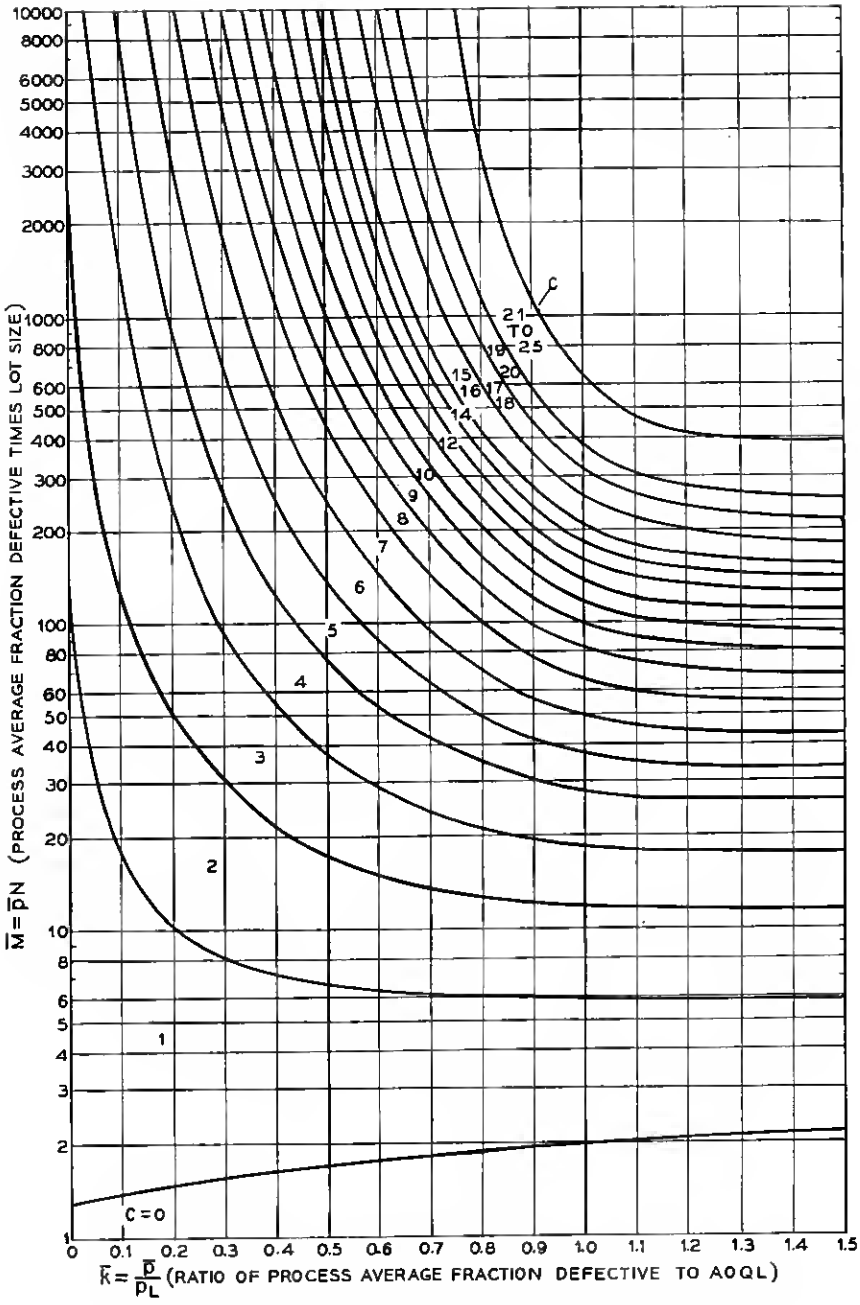

Fig. 9—Chart for determining allowable defect number—AOQL protection

it can be readily solved only for small values of c_1 and c_2. It is usually easier, particularly for the larger values of c_1 and c_2, to determine the maximum value of p_A (i.e., p_L) hy trial and error, using work charts for estimating the region in which p_1 will he found.

The procedure used in preparing the tahles and in finding the solution for a specific set of conditions is prohahly hest illustrated hy working out an actual example. In this procedure, use is made of known relationships hetween p_t and p_L values as given by the DL tables, where an initial risk of 0.06 and a Consumer's Risk of 0.10 are associated with p_t as outlined on page 11. For a given lot size, a work chart is prepared on which points corresponding to associated p_L and p_t values are plotted for each pair of c_1, c_2 values given in Fig. 7. A line drawn through all points for a single pair, such as $c_1 = 0$, $c_2 = 1$, indicates what p_t value sbould be associated with any p_L value specified. Fig. 10 indicates the nature of tbe work charts and the following example illustrates its use.

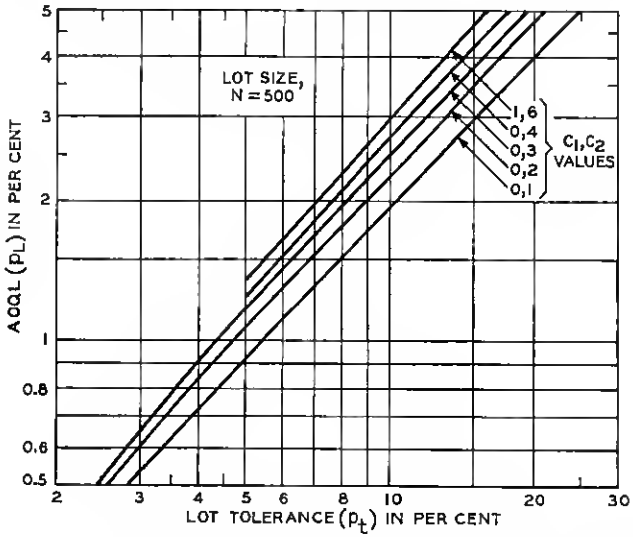

Fig. 10—Work chart giving p_t values corresponding to p_L values for given pairs of c_1, c_2 values—lot size, $N = 500$

Example: Given: $N = 500$, $p_L = .01$, $\bar{p} = .004$.

To find: n_1, n_2, c_1 and c_2 that will minimize average amount of inspection per lot. (Condition: For the associated lot tolerance value, p_t, the initial risk is 0.06 and the Consumer's Risk $P_C = 0.10$).

Solution: *Step 1*—Consult work chart, Fig. 10 for $N = 500$. Try $c_1 = 0$, $c_2 = 1$, and corresponding to $p_L = .01$, read $p_t = .054$.

Step 2—To determine if first choice of c_1, c_2 was the best.

$$M = p_t N = 0.054\ (500) = 27; k = \frac{\bar{p}}{p_t} = \frac{0.004}{0.054} = 0.074.$$

Consult Fig. 7, giving best c_1, c_2 values for given M and

k values. Corresponding to $M = 27$, $k = 0.074$, read $c_1 = 0$, $c_2 = 2$. Hence the first choice was not the best.

Step 3—Similar to Step 1. Consult work chart, Fig. 10. For $c_1 = 0$, $c_2 = 2$, corresponding to $p_L = 0.01$, read $p_t = .047$.

Step 4—Similar to Step 2. $M = p_t N = .047\ (500) = 23.5$; $k = \dfrac{\bar{p}}{p_t} = 0.085$. Consult Fig. 7 and corresponding to $M = 23.5$, $k = 0.085$, read $c_1 = 0, c_2 = 2$. This agrees with the choice in Step 3 and gives desired solution.

Step 5—To determine n_1 and n_2 for $c_1 = 0$, $c_2 = 2$. On Fig. 8, corresponding to $M = 23.5$, for $c_1 = 0$, read $p_t n_1 = 2.67$ and for $c_2 = 2$, read $p_t\ (n_1 + n_2) = 5.60$. Since per Step 3, $p_t = .047, n_1 = 57, n_1 + n_2 = 119$ and $n_2 = 62$.

Sampling Plan. $n_1 = 57, n_2 = 62, c_1 = 0, c_2 = 2$. (Rounding these values of n to the nearest 5 in accordance with the practice used in preparing the tables, gives $n_1 = 55$, $n_1 + n_2 = 120, n_2 = 65$, the values shown in Table DA-1 for $N = 401$–500, $\bar{p} = 0.21$–0.40%.)

Nature and Magnitude of Errors

Each sampling plan (combination of n and c values for single sampling, and of n_1, n_2, c_1 and c_2 values for double sampling) in the tables constitutes a solution for a range of process average values and a range of lot sizes. The following paragraphs give information regarding the magnitude of errors, associated with these solutions, that may be present because of the following two factors:

(1) Approximate equations and curves derived therefrom were used in place of exact equations over most areas of the tables, in order to minimize computative effort.

(2) The sample sizes, n_1 and $n_1 + n_2$, listed in the tables represent computed values rounded to the nearest unit for $n = 50$ or less, rounded to the nearest 5 for $50 < n < 1000$, and rounded to the nearest 10 for $n > 1000$.

Effect of Approximations—The percentage error in the Consumer's Risk value of 0.10, corresponding to lot tolerance values listed in the tables, attributable to the use of approximate equations and curves derived therefrom, is on the average about 3% and should not exceed 7%. The percentage error in the *AOQL* values, listed in the tables, attributable to the use of approximate relations involving the Poisson exponential rather than the binomial distribution, is on the average about 4% and should not exceed 12%. In a large number of exploratory checks for both single and double sampling, it was found in every instance that the Consumer's Risk and the *AOQL* values derived from approximate equations were larger than the corresponding exact values. The largest error observed in the Consumer's Risk for single sampling occurred when, instead of 0.10, the exact relation gave a value of 0.0937. Similarly the largest error in the *AOQL* occurred in single sampling when, instead of 0.0883, the exact relation gave a value of 0.0786. The observed errors in double sampling were of the same order of magnitude.

Effect of Rounding—The use of rounded values of n, n_1 and n_2 gives values of Consumer's Risk other than exactly 0.10. However each sampling plan lists sample sizes based on the largest lot size in the corresponding lot size range. As a result, the Consumer's Risk associated with the p_t value designated at the top of the Lot Tolerance tables does not exceed 0.10 except in a few isolated cases, where the risk may be as high as 0.12 for the largest lot size. Likewise, the *AOQL* value for any sampling plan in the *AOQL* tables does not exceed the value designated at the top of each table except in a few isolated cases, where the error due to rounding may be as much as 10% of the designated value for the largest lot size.

The Consumer's Risk value of 0.10 and the *AOQL* values listed in the tables, are therefore with few exceptions, upper bounds that will not be exceeded in the application of the tables.

NOMENCLATURE

N Number of pieces in lot.
n Number of pieces in sample.
n_1 Number of pieces in first sample.
n_2 Number of pieces in second sample.
c Allowable defect number.
c_1 Allowable defect number for first sample, n_1.
c_2 Allowable defect number for first and second samples combined, $n_1 + n_2$.
p_t Lot tolerance fraction defective.
p Fraction defective; also used specifically to denote fraction defective in submitted product.
$\bar{p}$ Process average (expected) fraction defective in submitted product.
p_A Average fraction defective in product after inspection—Average Outgoing Quality (*AOQ*).
p_L Maximum value of average fraction defective in product after inspection—Average Outgoing Quality Limit (*AOQL*).
p_1 Specific value of p in submitted product, for which $p_A = p_L$.
P_C Consumer's Risk.
P_a Probability of acceptance.
P_P Producer's Risk.
I Average number of pieces inspected per lot for submitted product of p quality.
$\bar{I}$ Specific value of I when p in submitted product $= \bar{p}$.
$\bar{I}_{min}$ Minimum value of $\bar{I}$.
$M = p_t N$ Number of defects in lot of tolerance (p_t) quality.
$\bar{M} = \bar{p}N$ Number of defects in a lot of process average ($\bar{p}$) quality.
$k = \dfrac{\bar{p}}{p_t}$ Ratio of process average fraction defective to lot tolerance fraction defective.
$\bar{k} = \dfrac{\bar{p}}{p_L}$ Ratio of process average fraction defective to *AOQL*.
m Number of defects found in sample.
$C_n^N = \dfrac{N!}{(N-n)!\,n!}$ Number of combinations of N things taken n at a time.

TABLE I: SINGLE SAMPLING LOT INSPECTION TABLES—BASED ON STATED VALUES OF "LOT TOLERANCE PER CENT DEFECTIVE" AND CONSUMER'S RISK = 0.10

TABLE SL-0.5
LOT TOLERANCE PER CENT DEFECTIVE = 0.5%

Process Average %	0–.005			.006–.050			.051–.100			.101–.150			.151–.200			.201–.250		
Lot Size	n	c	AOQL %	n	c	AOQL %	n	c	AOQL %	n	c	AOQL %	n	c	AOQL %	n	c	AOQL %
1–180	All	0	0	All	0	0	All	0	0	All	0	0	All	0	0	All	0	0
181–210	180	0	.02	180	0	.02	180	0	.02	180	0	.02	180	0	.02	180	0	.02
211–250	210	0	.03	210	0	.03	210	0	.03	210	0	.03	210	0	.03	210	0	.03
251–300	240	0	.03	240	0	.03	240	0	.03	240	0	.03	240	0	.03	240	0	.03
301–400	275	0	.04	275	0	.04	275	0	.04	275	0	.04	275	0	.04	275	0	.04
401–500	300	0	.05	300	0	.05	300	0	.05	300	0	.05	300	0	.05	300	0	.05
501–600	320	0	.05	320	0	.05	320	0	.05	320	0	.05	320	0	.05	320	0	.05
601–800	350	0	.06	350	0	.06	350	0	.06	350	0	.06	350	0	.06	350	0	.06
801–1000	365	0	.06	365	0	.06	365	0	.06	365	0	.06	365	0	.06	365	0	.06
1001–2000	410	0	.07	410	0	.07	410	0	.07	670	1	.08	670	1	.08	670	1	.08
2001–3000	430	0	.07	430	0	.07	705	1	.09	705	1	.09	955	2	.10	955	2	.10
3001–4000	440	0	.07	440	0	.07	730	1	.09	985	2	.10	1230	3	.11	1230	3	.11
4001–5000	445	0	.08	740	1	.10	1000	2	.11	1000	2	.11	1250	3	.12	1480	4	.12
5001–7000	450	0	.08	750	1	.10	1020	2	.12	1280	3	.12	1510	4	.13	1760	5	.14
7001–10,000	455	0	.08	760	1	.10	1040	2	.12	1530	4	.14	1790	5	.14	2240	7	.16
10,001–20,000	460	0	.08	775	1	.10	1330	3	.14	1820	5	.16	2300	7	.17	2780	9	.18
20,001–50,000	775	1	.11	1050	2	.13	1600	4	.15	2080	6	.18	3060	10	.20	4200	15	.22
50,001–100,000	780	1	.11	1060	2	.13	1840	5	.17	2590	8	.19	3780	13	.22	5140	19	.24

TABLE SL-1
LOT TOLERANCE PER CENT DEFECTIVE = 1.0%

Process Average %	0–.010			.011–.10			.11–.20			.21–.30			.31–.40			.41–.50		
Lot Size	n	c	AOQL %	n	c	AOQL %	n	c	AOQL %	n	c	AOQL %	n	c	AOQL %	n	c	AOQL %
1–120	All	0	0	All	0	0	All	0	0	All	0	0	All	0	0	All	0	0
121–150	120	0	.06	120	0	.06	120	0	.06	120	0	.06	120	0	.06	120	0	.06
151–200	140	0	.08	140	0	.08	140	0	.08	140	0	.08	140	0	.08	140	0	.08
201–300	165	0	.10	165	0	.10	165	0	.10	165	0	.10	165	0	.10	165	0	.10
301–400	175	0	.12	175	0	.12	175	0	.12	175	0	.12	175	0	.12	175	0	.12
401–500	180	0	.13	180	0	.13	180	0	.13	180	0	.13	180	0	.13	180	0	.13
501–600	190	0	.13	190	0	.13	190	0	.13	190	0	.13	190	0	.13	305	1	.14
601–800	200	0	.14	200	0	.14	200	0	.14	330	1	.15	330	1	.15	330	1	.15
801–1000	205	0	.14	205	0	.14	205	0	.14	335	1	.17	335	1	.17	335	1	.17
1001–2000	220	0	.15	220	0	.15	360	1	.19	490	2	.21	490	2	.21	610	3	.22
2001–3000	220	0	.15	375	1	.20	505	2	.23	630	3	.24	745	4	.26	870	5	.26
3001–4000	225	0	.15	380	1	.20	510	2	.24	645	3	.25	880	5	.28	1000	6	.29
4001–5000	225	0	.16	380	1	.20	520	2	.24	770	4	.28	895	5	.29	1120	7	.31
5001–7000	230	0	.15	385	1	.21	655	3	.27	780	4	.29	1020	6	.32	1260	8	.34
7001–10,000	230	0	.16	520	2	.25	660	3	.28	910	5	.32	1150	7	.34	1500	10	.37
10,001–20,000	390	1	.21	525	2	.26	785	4	.31	1040	6	.35	1400	9	.39	1980	14	.43
20,001–50,000	390	1	.21	530	2	.26	920	5	.34	1300	8	.39	1890	13	.44	2570	19	.48
50,001–100,000	390	1	.21	670	3	.29	1040	6	.36	1420	9	.41	2120	15	.47	3150	23	.50

n = Size of Sample; entry of "All" indicates that each piece in lot is to be inspected.
c = Allowable Defect Number for Sample.
AOQL = Average Outgoing Quality Limit.

TABLE I CONT'D: SINGLE SAMPLING LOT INSPECTION TABLES—BASED ON STATED VALUES OF "LOT TOLERANCE PER CENT DEFECTIVE" AND CONSUMER'S RISK = 0.10

TABLE SL-2
LOT TOLERANCE PER CENT DEFECTIVE = 2.0%

Process Average %	0–.02			.03–.20			.21–.40			.41–.60			.61–.80			.81–1.00		
Lot Size	n	c	AOQL %	n	c	AOQL %	n	c	AOQL %	n	c	AOQL %	n	c	AOQL %	n	c	AOQL %
1–75	All	0	0	All	0	0	All	0	0	All	0	0	All	0	0	All	0	0
76–100	70	0	.16	70	0	.16	70	0	.16	70	0	.16	70	0	.16	70	0	.16
101–200	85	0	.25	85	0	.25	85	0	.25	85	0	.25	85	0	.25	85	0	.25
201–300	95	0	.26	95	0	.26	95	0	.26	95	0	.26	95	0	.26	95	0	.26
301–400	100	0	.28	100	0	.28	100	0	.28	160	1	.32	160	1	.32	160	1	.32
401–500	105	0	.28	105	0	.28	105	0	.28	165	1	.34	165	1	.34	165	1	.34
501–600	105	0	.29	105	0	.29	175	1	.34	175	1	.34	175	1	.34	235	2	.36
601–800	110	0	.29	110	0	.29	180	1	.36	240	2	.40	240	2	.40	300	3	.41
801–1000	115	0	.28	115	0	.28	185	1	.37	245	2	.42	305	3	.44	305	3	.44
1001–2000	115	0	.30	190	1	.40	255	2	.47	325	3	.50	380	4	.54	440	5	.56
2001–3000	115	0	.31	190	1	.41	260	2	.48	385	4	.58	450	5	.60	565	7	.64
3001–4000	115	0	.31	195	1	.41	330	3	.54	450	5	.63	510	6	.65	690	9	.70
4001–5000	195	1	.41	260	2	.50	335	3	.54	455	5	.63	575	7	.69	750	10	.74
5001–7000	195	1	.42	265	2	.50	335	3	.55	515	6	.69	640	8	.73	870	12	.80
7001–10,000	195	1	.42	265	2	.50	395	4	.62	520	6	.69	760	10	.79	1050	15	.86
10,001–20,000	200	1	.42	265	2	.51	460	5	.67	650	8	.77	885	12	.86	1230	18	.94
20,001–50,000	200	1	.42	335	3	.58	520	6	.73	710	9	.81	1060	15	.93	1520	23	1.0
50,001–100,000	200	1	.42	335	3	.58	585	7	.76	770	10	.84	1180	17	.97	1690	26	1.1

TABLE SL-3
LOT TOLERANCE PER CENT DEFECTIVE = 3.0%

Process Average %	0–.03			.04–.30			.31–.60			.61–.90			.91–1.20			1.21–1.50		
Lot Size	n	c	AOQL %	n	c	AOQL %	n	c	AOQL %	n	c	AOQL %	n	c	AOQL %	n	c	AOQL %
1–40	All	0	0	All	0	0	All	0	0	All	0	0	All	0	0	All	0	0
41–55	40	0	.18	40	0	.18	40	0	.18	40	0	.18	40	0	.18	40	0	.18
56–100	55	0	.30	55	0	.30	55	0	.30	55	0	.30	55	0	.30	55	0	.30
101–200	65	0	.38	65	0	.38	65	0	.38	65	0	.38	65	0	.38	65	0	.38
201–300	70	0	.40	70	0	.40	70	0	.40	110	1	.48	110	1	.48	110	1	.48
301–400	70	0	.43	70	0	.43	115	1	.52	115	1	.52	115	1	.52	155	2	.54
401–500	70	0	.45	70	0	.45	120	1	.53	120	1	.53	160	2	.58	160	2	.58
501–600	75	0	.43	75	0	.43	120	1	.56	160	2	.63	160	2	.63	200	3	.65
601–800	75	0	.44	125	1	.57	125	1	.57	165	2	.66	205	3	.71	240	4	.74
801–1000	75	0	.45	125	1	.59	170	2	.67	210	3	.73	250	4	.76	290	5	.78
1001–2000	75	0	.47	130	1	.60	175	2	.72	260	4	.85	300	5	.90	380	7	.95
2001–3000	75	0	.48	130	1	.62	220	3	.82	300	5	.95	385	7	1.0	460	9	1.1
3001–4000	130	1	.63	175	2	.75	220	3	.84	305	5	.96	425	8	1.1	540	11	1.2
4001–5000	130	1	.63	175	2	.76	260	4	.91	345	6	1.0	465	9	1.1	620	13	1.2
5001–7000	130	1	.63	175	2	.76	265	4	.92	390	7	1.1	505	10	1.2	700	15	1.3
7001–10,000	130	1	.64	175	2	.77	265	4	.93	390	7	1.1	550	11	1.2	775	17	1.4
10,001–20,000	130	1	.64	175	2	.78	305	5	1.0	430	8	1.2	630	13	1.3	900	20	1.5
20,001–50,000	130	1	.65	225	3	.86	350	6	1.1	520	10	1.2	750	16	1.4	1090	25	1.6
50,001–100,000	130	1	.65	265	4	.96	390	7	1.1	590	12	1.3	830	18	1.5	1215	28	1.6

n = Size of Sample; entry of "All" indicates that each piece in lot is to be inspected.
c = Allowable Defect Number for Sample.
AOQL = Average Outgoing Quality Limit.

TABLE I CONT'D: SINGLE SAMPLING LOT INSPECTION TABLES—BASED ON STATED VALUES OF "LOT TOLERANCE PER CENT DEFECTIVE" AND CONSUMER'S RISK = 0.10

TABLE SL-4
LOT TOLERANCE PER CENT DEFECTIVE = 4.0%

Process Average %	0–.04			.05–.40			.41–.80			.81–1.20			1.21–1.60			1.61–2.00		
Lot Size	n	c	AOQL %	n	c	AOQL %	n	c	AOQL %	n	c	AOQL %	n	c	AOQL %	n	c	AOQL %
1–35	All	0	0	All	0	0	All	0	0	All	0	0	All	0	0	All	0	0
36–50	34	0	.35	34	0	.35	34	0	.35	34	0	.35	34	0	.35	34	0	.35
51–100	44	0	.47	44	0	.47	44	0	.47	44	0	.47	44	0	.47	44	0	.47
101–200	50	0	.55	50	0	.55	50	0	.55	50	0	.55	50	0	.55	50	0	.55
201–300	55	0	.57	55	0	.57	85	1	.71	85	1	.71	85	1	.71	85	1	.71
301–400	55	0	.58	55	0	.58	90	1	.72	120	2	.80	120	2	.80	145	3	.86
401–500	55	0	.60	55	0	.60	90	1	.77	120	2	.87	150	3	.91	150	3	.91
501–600	55	0	.61	95	1	.76	125	2	.87	125	2	.87	155	3	.93	185	4	.95
601–800	55	0	.62	95	1	.78	125	2	.93	160	3	.97	190	4	1.0	220	5	1.0
801–1000	55	0	.63	95	1	.80	130	2	.92	165	3	.98	220	5	1.1	255	6	1.1
1001–2000	55	0	.65	95	1	.84	165	3	1.1	195	4	1.2	255	6	1.3	315	8	1.4
2001–3000	95	1	.86	130	2	1.0	165	3	1.1	230	5	1.3	320	8	1.4	405	11	1.6
3001–4000	95	1	.86	130	2	1.0	195	4	1.2	260	6	1.4	350	9	1.5	465	13	1.6
4001–5000	95	1	.87	130	2	1.0	195	4	1.2	290	7	1.4	380	10	1.6	520	15	1.7
5001–7000	95	1	.87	130	2	1.0	200	4	1.2	290	7	1.5	410	11	1.7	575	17	1.9
7001–10,000	95	1	.88	130	2	1.1	230	5	1.4	325	8	1.5	440	12	1.7	645	19	1.9
10,001–20,000	95	1	.88	165	3	1.2	265	6	1.4	355	9	1.6	500	14	1.8	730	22	2.0
20,001–50,000	95	1	.88	165	3	1.2	295	7	1.5	380	10	1.7	590	17	2.0	870	26	2.1
50,001–100,000	95	1	.88	200	4	1.3	325	8	1.6	410	11	1.8	620	18	2.0	925	29	2.2

TABLE SL-5
LOT TOLERANCE PER CENT DEFECTIVE = 5.0%

Process Average %	0–.05			.06–.50			.51–1.00			1.01–1.50			1.51–2.00			2.01–2.50		
Lot Size	n	c	AOQL %	n	c	AOQL %	n	c	AOQL %	n	c	AOQL %	n	c	AOQL %	n	c	AOQL %
1–30	All	0	0	All	0	0	All	0	0	All	0	0	All	0	0	All	0	0
31–50	30	0	.49	30	0	.49	30	0	.49	30	0	.49	30	0	.49	30	0	.49
51–100	37	0	.63	37	0	.63	37	0	.63	37	0	.63	37	0	.63	37	0	.63
101–200	40	0	.74	40	0	.74	40	0	.74	40	0	.74	40	0	.74	40	0	.74
201–300	43	0	.74	43	0	.74	70	1	.92	70	1	.92	95	2	.99	95	2	.99
301–400	44	0	.74	44	0	.74	70	1	.99	100	2	1.0	120	3	1.1	145	4	1.1
401–500	45	0	.75	75	1	.95	100	2	1.1	100	2	1.1	125	3	1.2	150	4	1.2
501–600	45	0	.76	75	1	.98	100	2	1.1	125	3	1.2	150	4	1.3	175	5	1.3
601–800	45	0	.77	75	1	1.0	100	2	1.2	130	3	1.2	175	5	1.4	200	6	1.4
801–1000	45	0	.78	75	1	1.0	105	2	1.2	155	4	1.4	180	5	1.4	225	7	1.5
1001–2000	45	0	.80	75	1	1.0	130	3	1.4	180	5	1.6	230	7	1.7	280	9	1.8
2001–3000	75	1	1.1	105	2	1.3	135	3	1.4	210	6	1.7	280	9	1.9	370	13	2.1
3001–4000	75	1	1.1	105	2	1.3	160	4	1.5	210	6	1.7	305	10	2.0	420	15	2.2
4001–5000	75	1	1.1	105	2	1.3	160	4	1.5	235	7	1.8	330	11	2.0	440	16	2.2
5001–7000	75	1	1.1	105	2	1.3	185	5	1.7	260	8	1.9	350	12	2.2	490	18	2.4
7001–10,000	75	1	1.1	105	2	1.3	185	5	1.7	260	8	1.9	380	13	2.2	535	20	2.5
10,001–20,000	75	1	1.1	135	3	1.4	210	6	1.8	285	9	2.0	425	15	2.3	610	23	2.6
20,001–50,000	75	1	1.1	135	3	1.4	235	7	1.9	305	10	2.1	470	17	2.4	700	27	2.7
50,001–100,000	75	1	1.1	160	4	1.6	235	7	1.9	355	12	2.2	515	19	2.5	770	30	2.8

n = Size of Sample; entry of "All" indicates that each piece in lot is to be inspected.
c = Allowable Defect Number for Sample.
AOQL = Average Outgoing Quality Limit.

TABLE I CONT'D: SINGLE SAMPLING LOT INSPECTION TABLES—BASED ON STATED VALUES OF "LOT TOLERANCE PER CENT DEFECTIVE" AND CONSUMER'S RISK = 0.10

TABLE SL-7
LOT TOLERANCE PER CENT DEFECTIVE = 7.0%

Process Average %	0–.07			.08–.70			.71–1.40			1.41–2.10			2.11–2.80			2.81–3.50		
Lot Size	n	c	AOQL %	n	c	AOQL %	n	c	AOQL %	n	c	AOQL %	n	c	AOQL %	n	c	AOQL %
1–25	All	0	0	All	0	0	All	0	0	All	0	0	All	0	0	All	0	0
26–50	24	0	.80	24	0	.80	24	0	.80	24	0	.80	24	0	.80	24	0	.80
51–100	28	0	.95	28	0	.95	28	0	.95	28	0	.95	28	0	.95	28	0	.95
101–200	30	0	1.0	30	0	1.0	49	1	1.3	49	1	1.3	49	1	1.3	65	2	1.4
201–300	31	0	1.1	31	0	1.1	50	1	1.4	70	2	1.5	85	3	1.6	85	3	1.6
301–400	32	0	1.1	55	1	1.4	70	2	1.6	90	3	1.7	105	4	1.8	125	5	1.8
401–500	32	0	1.1	55	1	1.4	75	2	1.6	90	3	1.8	110	4	1.9	140	6	2.0
501–600	32	0	1.1	55	1	1.4	75	2	1.7	95	3	1.8	125	5	2.0	145	6	2.1
601–800	32	0	1.1	55	1	1.4	75	2	1.7	110	4	2.0	130	5	2.1	160	7	2.2
801–1000	33	0	1.1	55	1	1.4	95	3	1.9	110	4	2.1	145	6	2.2	180	8	2.4
1001–2000	55	1	1.5	75	2	1.8	95	3	2.0	130	5	2.3	185	8	2.5	230	11	2.8
2001–3000	55	1	1.5	75	2	1.8	115	4	2.1	150	6	2.4	215	10	2.8	300	15	3.0
3001–4000	55	1	1.5	75	2	1.8	115	4	2.2	165	7	2.6	235	11	2.9	330	17	3.2
4001–5000	55	1	1.5	75	2	1.8	130	5	2.4	185	8	2.7	250	12	3.0	350	18	3.3
5001–7000	55	1	1.5	75	2	1.8	130	5	2.4	185	8	2.7	270	13	3.1	385	20	3.4
7001–10,000	55	1	1.5	95	3	2.0	150	6	2.5	200	9	2.9	285	14	3.2	415	22	3.6
10,001–20,000	55	1	1.5	95	3	2.0	150	6	2.5	220	10	2.9	320	16	3.3	470	25	3.7
20,001–50,000	55	1	1.5	115	4	2.2	170	7	2.6	235	11	3.1	355	18	3.5	530	29	3.9
50,001–100,000	55	1	1.5	115	4	2.2	185	8	2.7	270	13	3.1	370	19	3.5	530	29	3.9

TABLE SL-10
LOT TOLERANCE PER CENT DEFECTIVE = 10.0%

Process Average %	0–.10			.11–1.00			1.01–2.00			2.01–3.00			3.01–4.00			4.01–5.00		
Lot Size	n	c	AOQL %	n	c	AOQL %	n	c	AOQL %	n	c	AOQL %	n	c	AOQL %	n	c	AOQL %
1–20	All	0	0	All	0	0	All	0	0	All	0	0	All	0	0	All	0	0
21–50	17	0	1.3	17	0	1.3	17	0	1.3	17	0	1.3	17	0	1.3	17	0	1.3
51–100	20	0	1.5	20	0	1.5	20	0	1.5	33	1	1.7	33	1	1.7	33	1	1.7
101–200	22	0	1.5	22	0	1.5	35	1	2.0	48	2	2.2	48	2	2.2	60	3	2.4
201–300	23	0	1.5	38	1	1.9	50	2	2.3	65	3	2.4	75	4	2.6	85	5	2.7
301–400	23	0	1.5	38	1	2.0	50	2	2.4	65	3	2.5	90	5	2.7	100	6	2.9
401–500	23	0	1.5	38	1	2.0	50	2	2.5	75	4	2.8	90	5	2.9	110	7	3.2
501–600	23	0	1.5	38	1	2.1	65	3	2.7	80	4	3.0	100	6	3.2	125	8	3.3
601–800	23	0	1.6	38	1	2.1	65	3	2.8	90	5	3.1	100	6	3.3	140	9	3.4
801–1000	39	1	2.1	50	2	2.6	65	3	2.8	90	5	3.2	115	7	3.4	150	10	3.7
1001–2000	39	1	2.1	50	2	2.6	80	4	3.1	105	6	3.4	140	9	3.9	195	14	4.4
2001–3000	39	1	2.1	50	2	2.6	80	4	3.1	115	7	3.7	165	11	4.1	230	17	4.7
3001–4000	39	1	2.1	50	2	2.6	90	5	3.4	130	8	3.8	190	13	4.4	255	19	4.8
4001–5000	39	1	2.1	50	2	2.6	90	5	3.5	130	8	3.9	200	14	4.5	270	20	4.9
5001–7000	39	1	2.1	65	3	3.0	105	6	3.6	140	9	4.1	200	14	4.6	295	22	5.0
7001–10,000	39	1	2.2	65	3	3.0	105	6	3.6	150	10	4.2	210	15	4.7	315	24	5.2
10,001–20,000	39	1	2.2	65	3	3.0	120	7	3.7	150	10	4.3	240	17	4.8	340	26	5.4
20,001–50,000	39	1	2.2	80	4	3.2	120	7	3.7	165	11	4.4	260	19	5.0	380	30	5.7
50,001–100,000	39	1	2.2	95	5	3.3	130	8	4.0	180	12	4.4	270	20	5.1	380	30	5.7

n = Size of Sample; entry of "All" indicates that each piece in lot is to be inspected.
c = Allowable Defect Number for Sample.
AOQL = Average Outgoing Quality Limit.

TABLE II: DOUBLE SAMPLING LOT INSPECTION TABLES—BASED ON STATED VALUES OF "LOT TOLERANCE PER CENT DEFECTIVE" AND CONSUMER'S RISK = 0.10

TABLE DL-0.5

LOT TOLERANCE PER CENT DEFECTIVE = 0.5%

Process Average %	0–.005							.006–.050							.051–.100						
	Trial 1		Trial 2				AOQL in %	Trial 1		Trial 2				AOQL in %	Trial 1		Trial 2				AOQL in %
Lot Size	n_1	c_1	n_2	n_1+n_2	c_2			n_1	c_1	n_2	n_1+n_2	c_2			n_1	c_1	n_2	n_1+n_2	c_2		
1–180	All	0	–	–	–		0	All	0	–	–	–		0	All	0	–	–	–		0
181–210	180	0	–	–	–		.02	180	0	–	–	–		.02	180	0	–	–	–		.02
211–250	210	0	–	–	–		.03	210	0	–	–	–		.03	210	0	–	–	–		.03
251–300	240	0	–	–	–		.03	240	0	–	–	–		.03	240	0	–	–	–		.03
301–400	275	0	–	–	–		.04	275	0	–	–	–		.04	275	0	–	–	–		.04
401–450	290	0	–	–	–		.04	290	0	–	–	–		.04	290	0	–	–	–		.04
451–500	340	0	110	450	1		.04	340	0	110	450	1		.04	340	0	110	450	1		.04
501–550	350	0	130	480	1		.05	350	0	130	480	1		.05	350	0	130	480	1		.05
551–600	360	0	150	510	1		.05	360	0	150	510	1		.05	360	0	150	510	1		.05
601–800	400	0	185	585	1		.06	400	0	185	585	1		.06	400	0	185	585	1		.06
801–1000	430	0	200	630	1		.07	430	0	200	630	1		.07	430	0	200	630	1		.07
1001–2000	490	0	265	755	1		.08	490	0	265	755	1		.08	490	0	265	755	1		.08
2001–3000	520	0	290	810	1		.09	520	0	290	810	1		.09	520	0	530	1050	2		.10
3001–4000	530	0	310	840	1		.09	530	0	570	1100	2		.11	530	0	570	1100	2		.11
4001–5000	540	0	305	845	1		.09	540	0	580	1120	2		.11	540	0	830	1370	3		.12
5001–7000	545	0	315	860	1		.10	545	0	615	1160	2		.11	545	0	865	1410	3		.12
7001–10,000	550	0	330	880	1		.10	550	0	620	1170	2		.12	550	0	1130	1680	4		.14
10,001–20,000	555	0	345	900	1		.10	555	0	925	1480	3		.13	555	0	1185	1740	4		.15
20,001–50,000	560	0	650	1210	2		.12	560	0	940	1500	3		.14	900	1	1400	2300	6		.16
50,001–100,000	560	0	650	1210	2		.12	560	0	1210	1770	4		.15	905	1	1655	2560	7		.17

Process Average %	.101–.150							.151–.200							.201–.250						
	Trial 1		Trial 2				AOQL in %	Trial 1		Trial 2				AOQL in %	Trial 1		Trial 2				AOQL in %
Lot Size	n_1	c_1	n_2	n_1+n_2	c_2			n_1	c_1	n_2	n_1+n_2	c_2			n_1	c_1	n_2	n_1+n_2	c_2		
1–180	All	0	–	–	–		0	All	0	–	–	–		0	All	0	–	–	–		0
181–210	180	0	–	–	–		.02	180	0	–	–	–		.02	180	0	–	–	–		.02
211–250	210	0	–	–	–		.03	210	0	–	–	–		.03	210	0	–	–	–		.03
251–300	240	0	–	–	–		.03	240	0	–	–	–		.03	240	0	–	–	–		.03
301–400	275	0	–	–	–		.04	275	0	–	–	–		.04	275	0	–	–	–		.04
401–450	290	0	–	–	–		.04	290	0	–	–	–		.04	290	0	–	–	–		.04
451–500	340	0	110	450	1		.04	340	0	110	450	1		.04	340	0	110	450	1		.04
501–550	350	0	130	480	1		.05	350	0	130	480	1		.05	350	0	130	480	1		.05
551–600	360	0	150	510	1		.05	360	0	150	510	1		.05	360	0	150	510	1		.05
601–800	400	0	185	585	1		.06	400	0	185	585	1		.06	400	0	185	585	1		.06
801–1000	430	0	200	630	1		.07	430	0	200	630	1		.07	430	0	200	630	1		.07
1001–2000	490	0	500	990	2		.09	490	0	500	990	2		.09	490	0	500	990	2		.09
2001–3000	520	0	530	1050	2		.10	520	0	760	1280	3		.11	520	0	980	1500	4		.11
3001–4000	530	0	810	1340	3		.11	530	0	1030	1560	4		.12	840	1	1160	2000	6		.13
4001–5000	540	0	1060	1600	4		.13	845	1	1205	2050	6		.14	845	1	1425	2270	7		.14
5001–7000	545	0	1105	1650	4		.13	860	1	1490	2350	7		.15	860	1	1700	2560	8		.16
7001–10,000	880	1	1300	2180	6		.15	880	1	1770	2650	8		.16	1170	2	2160	3330	11		.17
10,001–20,000	900	1	1840	2740	8		.18	1200	2	2250	3450	11		.19	1740	4	2620	4360	15		.21
20,001–50,000	1210	2	2330	3540	11		.20	1500	3	2980	4480	15		.22	2300	6	4240	6540	24		.24
50,001–100,000	1210	2	2590	3800	12		.21	1770	4	3690	5460	19		.23	2560	7	5420	7980	30		.26

TABLE DL-1

LOT TOLERANCE PER CENT DEFECTIVE = 1.0%

Process Average %	0-.010						.011-.10						.11-.20						.21-.30						.31-.40						.41-.50					
Lot Size	Trial 1		Trial 2			AOQL in %	Trial 1		Trial 2			AOQL in %	Trial 1		Trial 2			AOQL in %	Trial 1		Trial 2			AOQL in %	Trial 1		Trial 2			AOQL in %	Trial 1		Trial 2			AOQL in %
	n_1	c_1	n_2	n_1+n_2	c_2		n_1	c_1	n_2	n_1+n_2	c_2		n_1	c_1	n_2	n_1+n_2	c_2		n_1	c_1	n_2	n_1+n_2	c_2		n_1	c_1	n_2	n_1+n_2	c_2		n_1	c_1	n_2	n_1+n_2	c_2	
1-120	All	0	–	–	–	0	All	0	–	–	–	0	All	0	–	–	–	0	All	0	–	–	–	0	All	0	–	–	–	0	All	0	–	–	–	0
121-150	120	0	–	–	–	.06	120	0	–	–	–	.06	120	0	–	–	–	.06	120	0	–	–	–	.06	120	0	–	–	–	.06	120	0	–	–	–	.06
151-200	140	0	–	–	–	.08	140	0	–	–	–	.08	140	0	–	–	–	.08	140	0	–	–	–	.08	140	0	–	–	–	.08	140	0	–	–	–	.08
201-260	165	0	–	–	–	.10	165	0	–	–	–	.10	165	0	–	–	–	.10	165	0	–	–	–	.10	165	0	–	–	–	.10	165	0	–	–	–	.10
261-300	180	0	75	255	1	.10	180	0	75	255	1	.10	180	0	75	255	1	.10	180	0	75	255	1	.10	180	0	75	255	1	.10	180	0	75	255	1	.10
301-400	200	0	90	290	1	.12	200	0	90	290	1	.12	200	0	90	290	1	.12	200	0	90	290	1	.12	200	0	90	290	1	.12	200	0	90	290	1	.12
401-500	215	0	100	315	1	.14	215	0	100	315	1	.14	215	0	100	315	1	.14	215	0	100	315	1	.14	215	0	100	315	1	.14	215	0	100	315	1	.14
501-600	225	0	115	340	1	.15	225	0	115	340	1	.15	225	0	115	340	1	.15	225	0	115	340	1	.15	225	0	115	340	1	.15	225	0	205	430	2	.16
601-800	235	0	125	360	1	.16	235	0	125	360	1	.16	235	0	125	360	1	.16	235	0	230	465	2	.18	235	0	230	465	2	.18	235	0	230	465	2	.18
801-1000	245	0	135	380	1	.17	245	0	135	380	1	.17	245	0	250	495	2	.19	245	0	250	495	2	.19	245	0	250	495	2	.19	245	0	250	495	2	.19
1001-2000	265	0	155	420	1	.18	265	0	155	420	1	.18	265	0	285	550	2	.21	265	0	405	670	3	.23	265	0	515	780	4	.24	265	0	515	780	4	.24
2001-3000	270	0	160	430	1	.19	270	0	300	570	2	.22	270	0	420	690	3	.25	270	0	545	815	4	.26	430	1	620	1050	6	.28	430	1	830	1260	8	.30
3001-4000	275	0	160	435	1	.19	275	0	305	580	2	.22	275	0	435	710	3	.25	435	1	645	1080	6	.29	435	1	865	1300	8	.30	580	2	940	1520	10	.33
4001-5000	275	0	165	440	1	.19	275	0	310	585	2	.23	275	0	565	840	4	.28	440	1	660	1100	6	.30	440	1	1000	1440	9	.33	585	2	1075	1660	11	.35
5001-7000	275	0	170	445	1	.20	275	0	315	590	2	.23	275	0	580	855	4	.29	445	1	785	1230	7	.33	590	2	990	1580	10	.36	730	3	1190	1920	13	.38
7001-10,000	280	0	320	600	2	.24	280	0	460	740	3	.26	280	0	590	870	4	.30	450	1	920	1370	8	.35	600	2	1240	1840	12	.39	870	4	1540	2410	17	.41
10,001-20,000	280	0	325	605	2	.24	280	0	465	745	3	.27	450	1	700	1150	6	.33	605	2	1035	1640	10	.39	745	3	1485	2230	15	.43	1150	6	1990	3140	23	.44
20,001-50,000	280	0	325	605	2	.25	280	0	605	885	4	.30	450	1	830	1280	7	.36	605	2	1295	1900	12	.42	885	4	1845	2730	19	.47	1280	7	2600	3880	29	.52
50,001-100,000	280	0	325	605	2	.25	280	0	605	885	4	.30	450	1	960	1410	8	.38	605	2	1545	2150	14	.44	885	4	2085	2970	21	.49	1410	8	3280	4690	36	.55

n_1 = Size of First Sample; n_2 = Size of Second Sample; entry of "All" indicates that each piece in lot is to be inspected.
c_1 = Allowable Defect Number for First Sample; c_2 = Allowable Defect Number for First and Second Samples Combined.
AOQL = Average Outgoing Quality Limit.

TABLE II CONT'D: DOUBLE SAMPLING LOT INSPECTION TABLES—BASED ON STATED VALUES OF "LOT TOLERANCE PER CENT DEFECTIVE" AND CONSUMER'S RISK = 0.10

TABLE DL-2

LOT TOLERANCE PER CENT DEFECTIVE = 2.0%

Process Average %	0–.02						.03–.20						.21–.40						.41–.60						.61–.80						.81–1.00					
	Trial 1		Trial 2			AOQL in %	Trial 1		Trial 2			AOQL in %	Trial 1		Trial 2			AOQL in %	Trial 1		Trial 2			AOQL in %	Trial 1		Trial 2			AOQL in %	Trial 1		Trial 2			AOQL in %
Lot Size	n_1	c_1	n_2	n_1+n_2	c_2		n_1	c_1	n_2	n_1+n_2	c_2		n_1	c_1	n_2	n_1+n_2	c_2		n_1	c_1	n_2	n_1+n_2	c_2		n_1	c_1	n_2	n_1+n_2	c_2		n_1	c_1	n_2	n_1+n_2	c_2	
1–75	All	0	–	–	–	0	All	0	–	–	–	0	All	0	–	–	–	0	All	0	–	–	–	0	All	0	–	–	–	0	All	0	–	–	–	0
76–100	70	0	–	–	–	.16	70	0	–	–	–	.16	70	0	–	–	–	.16	70	0	–	–	–	.16	70	0	–	–	–	.16	70	0	–	–	–	.16
101–200	85	0	–	–	–	.25	85	0	–	–	–	.25	85	0	–	–	–	.25	85	0	–	–	–	.25	85	0	–	–	–	.25	85	0	–	–	–	.25
201–300	115	0	50	165	1	.29	115	0	50	165	1	.29	115	0	50	165	1	.29	115	0	50	165	1	.29	115	0	50	165	1	.29	115	0	50	165	1	.29
301–400	120	0	60	180	1	.32	120	0	60	180	1	.32	120	0	60	180	1	.32	120	0	115	235	2	.34	120	0	115	235	2	.34	120	0	115	235	2	.34
401–500	125	0	65	190	1	.33	125	0	65	190	1	.33	125	0	120	245	2	.37	125	0	120	245	2	.37	125	0	120	245	2	.37	125	0	120	245	2	.37
501–600	125	0	70	195	1	.34	125	0	70	195	1	.34	125	0	130	255	2	.39	125	0	130	255	2	.39	125	0	185	310	3	.41	125	0	185	310	3	.41
601–800	130	0	75	205	1	.35	130	0	75	205	1	.35	130	0	135	265	2	.41	130	0	195	325	3	.44	130	0	250	380	4	.45	130	0	250	380	4	.45
801–1000	135	0	75	210	1	.36	135	0	140	275	2	.42	135	0	140	275	2	.42	135	0	200	335	3	.46	135	0	255	390	4	.48	210	1	290	500	6	.54
1001–2000	135	0	85	220	1	.38	135	0	155	290	2	.45	135	0	220	355	3	.50	135	0	285	420	4	.54	220	1	375	595	7	.62	220	1	485	705	9	.65
2001–3000	140	0	85	225	1	.39	140	0	155	295	2	.46	140	0	285	425	4	.56	225	1	385	610	7	.65	295	2	435	730	9	.69	360	3	535	895	12	.72
3001–4000	140	0	85	225	1	.40	140	0	225	365	3	.52	140	0	290	430	4	.57	225	1	455	680	8	.69	295	2	555	850	11	.74	365	3	715	1080	15	.77
4001–5000	140	0	160	300	2	.47	140	0	230	370	3	.53	140	0	360	500	5	.61	225	1	460	685	8	.70	300	2	620	920	12	.77	435	4	775	1210	17	.81
5001–7000	140	0	160	300	2	.48	140	0	230	370	3	.54	140	0	365	505	5	.62	300	2	450	750	9	.74	370	3	680	1050	14	.82	505	5	935	1440	21	.89
7001–10,000	140	0	160	300	2	.48	140	0	235	375	3	.54	225	1	350	575	6	.66	300	2	520	820	10	.77	375	3	735	1110	15	.85	575	6	1055	1630	24	.95
10,001–20,000	140	0	165	305	2	.49	140	0	235	375	3	.54	225	1	415	640	7	.71	305	2	645	950	12	.83	375	3	935	1310	18	.92	640	7	1240	1880	28	1.0
20,001–50,000	140	0	165	305	2	.49	140	0	305	445	4	.59	225	1	480	705	8	.75	305	2	715	1020	13	.86	445	4	1045	1490	21	.98	705	8	1635	2340	36	1.1
50,001–100,000	140	0	165	305	2	.49	140	0	305	445	4	.60	225	1	545	770	9	.78	305	2	830	1135	15	.90	510	5	1150	1660	24	1.0	770	9	1850	2620	41	1.2

TABLE DL-3

LOT TOLERANCE PER CENT DEFECTIVE = 3.0%

Process Average %	0–.03								.04–.30								.31–.60							
	Trial 1		Trial 2					AOQL in %	Trial 1		Trial 2					AOQL in %	Trial 1		Trial 2					AOQL in %
Lot Size	n_1	c_1	n_2	n_1+n_2	c_2				n_1	c_1	n_2	n_1+n_2	c_2				n_1	c_1	n_2	n_1+n_2	c_2			
1–40	All	0	–	–	–	0			All	0	–	–	–	0			All	0	–	–	–	0		
41–55	40	0	–	–	–	.18			40	0	–	–	–	.18			40	0	–	–	–	.18		
56–100	55	0	–	–	–	.30			55	0	–	–	–	.30			55	0	–	–	–	.30		
101–150	70	0	30	100	1	.37			70	0	30	100	1	.37			70	0	30	100	1	.37		
151–200	75	0	40	115	1	.45			75	0	40	115	1	.45			75	0	40	115	1	.45		
201–300	75	0	40	115	1	.50			75	0	40	115	1	.50			75	0	40	115	1	.50		
301–400	80	0	45	125	1	.52			80	0	45	125	1	.52			80	0	45	125	1	.52		
401–500	85	0	50	135	1	.53			85	0	50	135	1	.53			85	0	50	135	1	.53		
501–600	85	0	50	135	1	.54			85	0	50	135	1	.54			85	0	95	180	2	.62		
601–800	90	0	50	140	1	.55			90	0	95	185	2	.64			90	0	135	225	3	.70		
801–1000	90	0	55	145	1	.56			90	0	100	190	2	.66			90	0	140	230	3	.72		
1001–2000	90	0	60	150	1	.58			90	0	105	195	2	.70			90	0	190	280	4	.84		
2001–3000	90	0	60	150	1	.59			90	0	155	245	3	.80			90	0	200	290	4	.86		
3001–4000	95	0	105	200	2	.72			95	0	150	245	3	.80			95	0	235	330	5	.92		
4001–5000	95	0	105	200	2	.73			95	0	155	250	3	.81			150	1	230	380	6	.98		
5001–7000	95	0	105	200	2	.73			95	0	155	250	3	.81			150	1	230	380	6	1.0		
7001–10,000	95	0	105	200	2	.73			95	0	155	250	3	.81			150	1	275	425	7	1.0		
10,001–20,000	95	0	105	200	2	.74			95	0	200	295	4	.92			150	1	320	470	8	1.1		
20,001–50,000	95	0	105	200	2	.74			95	0	200	295	4	.93			150	1	365	515	9	1.2		
50,001–100,000	95	0	105	200	2	.75			95	0	245	340	5	1.0			150	1	405	555	10	1.2		

Process Average %	.61–.90								.91–1.20								1.21–1.50							
	Trial 1		Trial 2					AOQL in %	Trial 1		Trial 2					AOQL in %	Trial 1		Trial 2					AOQL in %
Lot Size	n_1	c_1	n_2	n_1+n_2	c_2				n_1	c_1	n_2	n_1+n_2	c_2				n_1	c_1	n_2	n_1+n_2	c_2			
1–40	All	0	–	–	–	0			All	0	–	–	–	0			All	0	–	–	–	0		
41–55	40	0	–	–	–	.18			40	0	–	–	–	.18			40	0	–	–	–	.18		
56–100	55	0	–	–	–	.30			55	0	–	–	–	.30			55	0	–	–	–	.30		
101–150	70	0	30	100	1	.37			70	0	30	100	1	.37			70	0	30	100	1	.37		
151–200	75	0	40	115	1	.45			75	0	65	140	2	.47			75	0	65	140	2	.47		
201–300	75	0	80	155	2	.54			75	0	80	155	2	.54			75	0	80	155	2	.54		
301–400	80	0	85	165	2	.57			80	0	120	200	3	.62			80	0	120	200	3	.62		
401–500	85	0	125	210	3	.64			85	0	125	210	3	.64			85	0	160	245	4	.69		
501–600	85	0	130	215	3	.67			85	0	170	255	4	.72			135	1	185	320	6	.76		
601–800	90	0	170	260	4	.74			140	1	195	335	6	.79			140	1	210	350	7	.81		
801–1000	90	0	180	270	4	.77			145	1	235	380	7	.85			145	1	270	415	8	.86		
1001–2000	150	1	210	360	6	.90			150	1	325	475	9	1.0			195	2	350	545	11	1.1		
2001–3000	150	1	300	450	8	1.0			200	2	365	565	11	1.1			290	4	470	760	16	1.2		
3001–4000	150	1	350	500	9	1.1			245	3	405	650	13	1.2			330	5	545	875	19	1.2		
4001–5000	200	2	340	540	10	1.2			250	3	445	695	14	1.2			380	6	620	1000	22	1.3		
5001–7000	200	2	385	585	11	1.2			250	3	530	780	16	1.3			380	6	700	1080	24	1.4		
7001–10,000	200	2	425	625	12	1.2			250	3	575	825	17	1.3			425	7	785	1210	27	1.5		
10,001–20,000	200	2	475	675	13	1.3			295	4	655	950	20	1.4			470	8	900	1370	31	1.6		
20,001–50,000	200	2	515	715	14	1.3			295	4	755	1050	23	1.5			515	9	1165	1680	39	1.7		
50,001–100,000	200	2	555	755	15	1.3			340	5	840	1180	26	1.6			515	9	1315	1830	43	1.8		

n_1 = Size of First Sample; n_2 = Size of Second Sample; entry of "All" indicates that each piece in lot is to be inspected.
c_1 = Allowable Defect Number for First Sample; c_2 = Allowable Defect Number for First and Second Samples Combined.
AOQL = Average Outgoing Quality Limit.

TABLE II CONT'D: DOUBLE SAMPLING LOT INSPECTION TABLES—BASED ON STATED VALUES OF "LOT TOLERANCE PER CENT DEFECTIVE" AND CONSUMER'S RISK = 0.10

TABLE DL-4

LOT TOLERANCE PER CENT DEFECTIVE = 4.0%

Process Average %	0–.04						.05–.40						.41–.80						.81–1.20						1.21–1.60						1.61–2.00					
	Trial 1		Trial 2			AOQL in %	Trial 1		Trial 2			AOQL in %	Trial 1		Trial 2			AOQL in %	Trial 1		Trial 2			AOQL in %	Trial 1		Trial 2			AOQL in %	Trial 1		Trial 2			AOQL in %
Lot Size	n_1	c_1	n_2	n_1+n_2	c_2		n_1	c_1	n_2	n_1+n_2	c_2		n_1	c_1	n_2	n_1+n_2	c_2		n_1	c_1	n_2	n_1+n_2	c_2		n_1	c_1	n_2	n_1+n_2	c_2		n_1	c_1	n_2	n_1+n_2	c_2	
1–35	All	0	–	–	–	0	All	0	–	–	–	0	All	0	–	–	–	0	All	0	–	–	–	0	All	0	–	–	–	0	All	0	–	–	–	0
36–50	34	0	–	–	–	.35	34	0	–	–	–	.35	34	0	–	–	–	.35	34	0	–	–	–	.35	34	0	–	–	–	.35	34	0	–	–	–	.35
51–75	40	0	–	–	–	.43	40	0	–	–	–	.43	40	0	–	–	–	.43	40	0	–	–	–	.43	40	0	–	–	–	.43	40	0	–	–	–	.43
76–100	50	0	25	75	1	.46	50	0	25	75	1	.46	50	0	25	75	1	.46	50	0	25	75	1	.46	50	0	25	75	1	.46	50	0	25	75	1	.46
101–150	55	0	30	85	1	.55	55	0	30	85	1	.55	55	0	30	85	1	.55	55	0	30	85	1	.55	55	0	30	85	1	.55	55	0	30	85	1	.55
151–200	60	0	30	90	1	.64	60	0	30	90	1	.64	60	0	30	90	1	.64	60	0	55	115	2	.68	60	0	55	115	2	.68	60	0	55	115	2	.68
201–300	60	0	35	95	1	.70	60	0	35	95	1	.70	60	0	65	125	2	.75	60	0	65	125	2	.75	60	0	90	150	3	.84	60	0	90	150	3	.84
301–400	65	0	35	100	1	.71	65	0	35	100	1	.71	65	0	65	130	2	.80	65	0	95	160	3	.86	65	0	95	160	3	.86	65	0	120	185	4	.92
401–500	65	0	40	105	1	.73	65	0	70	135	2	.83	65	0	70	135	2	.83	65	0	100	165	3	.92	65	0	130	195	4	.96	105	1	140	245	6	1.0
501–600	65	0	40	105	1	.74	65	0	75	140	2	.85	65	0	100	165	3	.93	65	0	135	200	4	1.0	105	1	145	250	6	1.1	105	1	175	280	7	1.1
601–800	65	0	40	105	1	.75	65	0	75	140	2	.87	65	0	110	175	3	.97	65	0	140	205	4	1.0	105	1	185	290	7	1.2	105	1	210	315	8	1.2
801–1000	70	0	40	110	1	.76	70	0	75	145	2	.90	70	0	105	175	3	.98	110	1	155	265	6	1.2	110	1	210	320	8	1.2	145	2	230	375	10	1.3
1001–2000	70	0	40	110	1	.78	70	0	80	150	2	.94	70	0	145	215	4	1.1	110	1	195	305	7	1.3	150	2	240	390	10	1.5	180	3	295	475	13	1.6
2001–3000	70	0	80	150	2	.95	70	0	115	185	3	1.1	70	0	180	250	5	1.2	110	1	260	370	9	1.4	185	3	305	490	13	1.6	220	4	410	630	18	1.7
3001–4000	70	0	80	150	2	.96	70	0	115	185	3	1.1	110	1	175	285	6	1.3	150	2	255	405	10	1.5	185	3	340	525	14	1.6	285	6	465	750	22	1.8
4001–5000	70	0	80	150	2	.97	70	0	115	185	3	1.1	115	1	170	285	6	1.3	150	2	285	435	11	1.6	185	3	395	580	16	1.7	285	6	520	805	24	1.9
5001–7000	70	0	80	150	2	.98	70	0	115	185	3	1.1	115	1	205	320	7	1.4	150	2	320	470	12	1.6	185	3	435	620	17	1.7	320	7	585	905	27	2.0
7001–10,000	70	0	80	150	2	.98	70	0	150	220	4	1.2	115	1	205	320	7	1.4	150	2	325	475	12	1.7	220	4	460	680	19	1.9	320	7	645	965	29	2.1
10,001–20,000	70	0	80	150	2	.98	70	0	150	220	4	1.2	115	1	235	350	8	1.5	150	2	355	505	13	1.7	220	4	495	715	20	1.9	350	8	790	1140	35	2.2
20,001–50,000	70	0	80	150	2	.99	70	0	150	220	4	1.2	115	1	270	385	9	1.6	150	2	420	570	15	1.7	255	5	575	830	24	2.0	385	9	895	1280	40	2.3
50,001–100,000	70	0	80	150	2	.99	70	0	185	255	5	1.3	115	1	300	415	10	1.7	150	2	450	600	16	1.8	255	5	665	920	27	2.1	415	10	985	1400	44	2.4

TABLE DL-5

LOT TOLERANCE PER CENT DEFECTIVE = 5.0%

Process Average %	0–.05							.06–.50							.51–1.00							1.01–1.50							1.51–2.00							2.01–2.50						
	Trial 1		Trial 2				AOQL in %	Trial 1		Trial 2				AOQL in %	Trial 1		Trial 2				AOQL in %	Trial 1		Trial 2				AOQL in %	Trial 1		Trial 2				AOQL in %	Trial 1		Trial 2				AOQL in %
Lot Size	n_1	c_1	n_2	n_1+n_2	c_2			n_1	c_1	n_2	n_1+n_2	c_2			n_1	c_1	n_2	n_1+n_2	c_2			n_1	c_1	n_2	n_1+n_2	c_2			n_1	c_1	n_2	n_1+n_2	c_2			n_1	c_1	n_2	n_1+n_2	c_2		
1–30	All	0	–	–	–	0		All	0	–	–	–	0		All	0	–	–	–	0		All	0	–	–	–	0		All	0	–	–	–	0		All	0	–	–	–	0	
31–50	30	0	–	–	–	.49		30	0	–	–	–	.49		30	0	–	–	–	.49		30	0	–	–	–	.49		30	0	–	–	–	.49		30	0	–	–	–	.49	
51–75	38	0	–	–	–	.59		38	0	–	–	–	.59		38	0	–	–	–	.59		38	0	–	–	–	.59		38	0	–	–	–	.59		38	0	–	–	–	.59	
76–100	44	0	21	65	1	.64		44	0	21	65	1	.64		44	0	21	65	1	.64		44	0	21	65	1	.64		44	0	21	65	1	.64		44	0	21	65	1	.64	
101–200	49	0	26	75	1	.84		49	0	26	75	1	.84		49	0	26	75	1	.84		49	0	51	100	2	.91		49	0	51	100	2	.91		49	0	51	100	2	.91	
201–300	50	0	30	80	1	.91		50	0	30	80	1	.91		50	0	55	105	2	1.0		50	0	55	105	2	1.0		50	0	80	130	3	1.1		50	0	100	150	4	1.1	
301–400	55	0	30	85	1	.92		55	0	55	110	2	1.1		55	0	55	110	2	1.1		55	0	80	135	3	1.1		55	0	100	155	4	1.2		85	1	105	190	6	1.3	
401–500	55	0	30	85	1	.93		55	0	55	110	2	1.1		55	0	80	135	3	1.2		55	0	105	160	4	1.3		85	1	120	205	6	1.4		85	1	140	225	7	1.4	
501–600	55	0	30	85	1	.94		55	0	60	115	2	1.1		55	0	85	140	3	1.2		55	0	110	165	4	1.3		85	1	145	230	7	1.4		85	1	165	250	8	1.5	
601–800	55	0	35	90	1	.95		55	0	65	120	2	1.1		55	0	85	140	3	1.3		90	1	125	215	6	1.5		90	1	170	260	8	1.5		120	2	185	305	10	1.6	
801–1000	55	0	35	90	1	.96		55	0	65	120	2	1.1		55	0	115	170	4	1.4		90	1	150	240	7	1.5		90	1	200	290	9	1.6		120	2	210	330	11	1.7	
1001–2000	55	0	35	90	1	.98		55	0	95	150	3	1.3		55	0	120	175	4	1.4		90	1	185	275	8	1.7		120	2	225	345	11	1.9		175	4	260	435	15	2.0	
2001–3000	55	0	65	120	2	1.2		55	0	95	150	3	1.3		55	0	150	205	5	1.5		120	2	180	300	9	1.9		150	3	270	420	14	2.1		205	5	375	580	21	2.3	
3001–4000	55	0	65	120	2	1.2		55	0	95	150	3	1.3		90	1	140	230	6	1.6		120	2	210	330	10	2.0		150	3	295	445	15	2.3		230	6	420	650	24	2.4	
4001–5000	55	0	65	120	2	1.2		55	0	95	150	3	1.4		90	1	165	255	7	1.8		120	2	255	375	12	2.1		150	3	345	495	17	2.3		255	7	445	700	26	2.5	
5001–7000	55	0	65	120	2	1.2		55	0	95	150	3	1.4		90	1	165	255	7	1.8		120	2	260	380	12	2.1		150	3	370	520	18	2.3		255	7	495	750	28	2.6	
7001–10,000	55	0	65	120	2	1.2		55	0	120	175	4	1.5		90	1	190	280	8	1.9		120	2	285	405	13	2.1		175	4	370	545	19	2.4		280	8	540	820	31	2.7	
10,001–20,000	55	0	65	120	2	1.2		55	0	120	175	4	1.5		90	1	190	280	8	1.9		120	2	310	430	14	2.2		175	4	420	595	21	2.4		280	8	660	940	36	2.8	
20,001–50,000	55	0	65	120	2	1.2		55	0	150	205	5	1.7		90	1	215	305	9	2.0		120	2	335	455	15	2.2		205	5	485	690	25	2.5		305	9	745	1050	41	2.9	
50,001–100,000	55	0	65	120	2	1.2		55	0	150	205	5	1.7		90	1	240	330	10	2.1		120	2	360	480	16	2.3		205	5	555	760	28	2.6		330	10	810	1140	45	3.0	

n_1 = Size of First Sample; n_2 = Size of Second Sample; entry of "All" indicates that each piece in lot is to be inspected.
c_1 = Allowable Defect Number for First Sample; c_2 = Allowable Defect Number for First and Second Samples Combined.
AOQL = Average Outgoing Quality Limit.

TABLE II CONT'D: DOUBLE SAMPLING LOT INSPECTION TABLES—BASED ON STATED VALUES OF "LOT TOLERANCE PER CENT DEFECTIVE" AND CONSUMER'S RISK = 0.10

TABLE DL-7

LOT TOLERANCE PER CENT DEFECTIVE = 7.0%

Process Average %	0-.07						.08-.70						.71-1.40						1.41-2.10						2.11-2.80						2.81-3.50					
	Trial 1		Trial 2			AOQL in %	Trial 1		Trial 2			AOQL in %	Trial 1		Trial 2			AOQL in %	Trial 1		Trial 2			AOQL in %	Trial 1		Trial 2			AOQL in %	Trial 1		Trial 2			AOQL in %
Lot Size	n_1	c_1	n_2	n_1+n_2	c_2		n_1	c_1	n_2	n_1+n_2	c_2		n_1	c_1	n_2	n_1+n_2	c_2		n_1	c_1	n_2	n_1+n_2	c_2		n_1	c_1	n_2	n_1+n_2	c_2		n_1	c_1	n_2	n_1+n_2	c_2	
1-25	All	0	–	–	–	0	All	0	–	–	–	0	All	0	–	–	–	0	All	0	–	–	–	0	All	0	–	–	–	0	All	0	–	–	–	0
26-50	24	0	–	–	–	.80	24	0	–	–	–	.80	24	0	–	–	–	.80	24	0	–	–	–	.80	24	0	–	–	–	.80	24	0	–	–	–	.80
51-75	31	0	15	46	1	.90	31	0	15	46	1	.90	31	0	15	46	1	.90	31	0	15	46	1	.90	31	0	15	46	1	.90	31	0	15	46	1	.90
76-110	34	0	16	50	1	1.1	34	0	16	50	1	1.1	34	0	16	50	1	1.1	34	0	31	65	2	1.2	34	0	31	65	2	1.2	34	0	31	65	2	1.2
111-200	36	0	19	55	1	1.2	36	0	19	55	1	1.2	36	0	39	75	2	1.4	36	0	54	90	3	1.5	36	0	54	90	3	1.5	36	0	69	105	4	1.5
201-300	37	0	23	60	1	1.3	37	0	23	60	1	1.3	37	0	38	75	2	1.5	37	0	58	95	3	1.6	37	0	73	110	4	1.7	60	1	80	140	6	1.9
301-400	38	0	22	60	1	1.3	38	0	42	80	2	1.5	38	0	57	95	3	1.7	38	0	77	115	4	1.8	60	1	85	145	6	1.9	60	1	100	160	7	2.0
401-500	39	0	21	60	1	1.3	39	0	41	80	2	1.5	39	0	61	100	3	1.7	39	0	76	115	4	1.8	60	1	105	165	7	2.1	60	1	135	195	9	2.2
501-600	39	0	26	65	1	1.3	39	0	46	85	2	1.6	39	0	61	100	3	1.7	65	1	90	155	6	2.1	65	1	120	185	8	2.2	85	2	130	215	10	2.3
601-800	39	0	26	65	1	1.4	39	0	46	85	2	1.6	39	0	81	120	4	1.9	65	1	105	170	7	2.2	65	1	140	205	9	2.3	85	2	165	250	12	2.5
801-1000	39	0	26	65	1	1.4	39	0	46	85	2	1.6	39	0	86	125	4	2.0	65	1	110	175	7	2.2	85	2	140	225	10	2.5	105	3	180	285	14	2.7
1001-2000	40	0	45	85	2	1.7	40	0	65	105	3	1.9	40	0	105	145	5	2.2	65	1	150	215	9	2.5	105	3	175	280	13	2.8	145	5	230	375	19	3.1
2001-3000	40	0	45	85	2	1.7	40	0	65	105	3	1.9	65	1	100	165	6	2.3	85	2	165	250	11	2.7	105	3	210	315	15	3.0	165	6	300	465	24	3.3
3001-4000	40	0	45	85	2	1.7	40	0	65	105	3	1.9	65	1	115	180	7	2.4	85	2	185	270	12	2.8	105	3	250	355	17	3.1	180	7	335	515	27	3.4
4001-5000	40	0	45	85	2	1.7	40	0	85	125	4	2.1	65	1	115	180	7	2.5	85	2	185	270	12	2.9	125	4	245	370	18	3.2	180	7	370	550	29	3.6
5001-7000	40	0	45	85	2	1.7	40	0	85	125	4	2.1	65	1	135	200	8	2.5	85	2	205	290	13	3.0	125	4	265	390	19	3.3	200	8	385	585	31	3.8
7001-10,000	40	0	45	85	2	1.7	40	0	85	125	4	2.1	65	1	135	200	8	2.6	85	2	205	290	13	3.1	125	4	300	425	21	3.4	200	8	450	650	35	3.9
10,001-20,000	40	0	45	85	2	1.7	40	0	85	125	4	2.1	65	1	155	220	9	2.7	85	2	220	305	14	3.2	125	4	335	460	23	3.5	220	9	485	705	38	4.0
20,001-50,000	40	0	45	85	2	1.7	40	0	105	145	5	2.3	65	1	170	235	10	2.8	85	2	240	325	15	3.3	145	5	360	505	26	3.5	220	9	565	785	43	4.1
50,001-100,000	40	0	45	85	2	1.7	40	0	105	145	5	2.3	65	1	170	235	10	2.9	105	3	270	375	18	3.4	165	6	390	555	29	3.7	235	10	610	845	47	4.2

TABLE DL-10

LOT TOLERANCE PER CENT DEFECTIVE = 10.0%

Process Average %	0–.10							.11–1.00							1.01–2.00							2.01–3.00						
	Trial 1		Trial 2				AOQL in %	Trial 1		Trial 2				AOQL in %	Trial 1		Trial 2				AOQL in %	Trial 1		Trial 2				AOQL in %
Lot Size	n_1	c_1	n_2	n_1+n_2	c_2			n_1	c_1	n_2	n_1+n_2	c_2			n_1	c_1	n_2	n_1+n_2	c_2			n_1	c_1	n_2	n_1+n_2	c_2		
1–20	All	0	–	–	–	0		All	0	–	–	–	0		All	0	–	–	–	0		All	0	–	–	–	0	
21–50	17	0	–	–	–	1.3		17	0	–	–	–	1.3		17	0	–	–	–	1.3		17	0	–	–	–	1.3	
51–100	25	0	13	38	1	1.6		25	0	13	38	1	1.6		25	0	13	38	1	1.6		25	0	24	49	2	1.8	
101–200	27	0	15	42	1	1.8		27	0	15	42	1	1.8		27	0	28	55	2	2.1		27	0	38	65	3	2.3	
201–300	27	0	16	43	1	1.9		27	0	30	57	2	2.2		27	0	43	70	3	2.4		27	0	53	80	4	2.7	
301–400	27	0	17	44	1	1.9		27	0	33	60	2	2.2		27	0	43	70	3	2.5		44	1	66	110	6	2.9	
401–500	28	0	16	44	1	1.9		28	0	32	60	2	2.3		28	0	57	85	4	2.7		44	1	76	120	7	3.1	
501–600	28	0	17	45	1	1.9		28	0	32	60	2	2.3		28	0	57	85	4	2.8		45	1	75	120	7	3.3	
601–800	28	0	17	45	1	2.0		28	0	47	75	3	2.6		28	0	57	85	4	2.9		45	1	90	135	8	3.5	
801–1000	28	0	32	60	2	2.3		28	0	47	75	3	2.6		28	0	72	100	5	3.0		45	1	90	135	8	3.5	
1001–2000	28	0	32	60	2	2.4		28	0	47	75	3	2.7		45	1	70	115	6	3.3		60	2	105	165	10	3.9	
2001–3000	28	0	32	60	2	2.4		28	0	47	75	3	2.7		45	1	85	130	7	3.5		60	2	130	190	12	4.1	
3001–4000	28	0	32	60	2	2.4		28	0	62	90	4	2.9		45	1	85	130	7	3.5		60	2	130	190	12	4.2	
4001–5000	28	0	32	60	2	2.4		28	0	62	90	4	3.0		45	1	95	140	8	3.7		60	2	140	200	13	4.3	
5001–7000	28	0	32	60	2	2.4		28	0	62	90	4	3.0		45	1	95	140	8	3.8		60	2	140	200	13	4.4	
7001–10,000	28	0	32	60	2	2.5		28	0	62	90	4	3.0		45	1	95	140	8	3.8		60	2	155	215	14	4.4	
10,001–20,000	28	0	32	60	2	2.5		28	0	62	90	4	3.0		45	1	110	155	9	3.9		60	2	165	225	15	4.4	
20,001–50,000	28	0	32	60	2	2.5		28	0	72	100	5	3.3		45	1	120	165	10	3.9		75	3	200	275	19	4.8	
50,001–100,000	28	0	32	60	2	2.5		28	0	72	100	5	3.3		45	1	135	180	11	4.2		75	3	200	275	19	4.8	

Process Average %	3.01–4.00							4.01–5.00						
	Trial 1		Trial 2				AOQL in %	Trial 1		Trial 2				AOQL in %
Lot Size	n_1	c_1	n_2	n_1+n_2	c_2			n_1	c_1	n_2	n_1+n_2	c_2		
1–20	All	0	–	–	–	0		All	0	–	–	–	0	
21–50	17	0	–	–	–	1.3		17	0	–	–	–	1.3	
51–100	25	0	24	49	2	1.8		25	0	24	49	2	1.8	
101–200	27	0	53	80	4	2.4		27	0	53	80	4	2.4	
201–300	43	1	62	105	6	2.8		43	1	82	125	8	3.0	
301–400	44	1	86	130	8	3.1		60	2	90	150	10	3.2	
401–500	44	1	101	145	9	3.3		60	2	105	165	11	3.4	
501–600	60	2	100	160	10	3.4		75	3	115	190	13	3.6	
601–800	60	2	110	170	11	3.7		75	3	140	215	15	3.9	
801–1000	60	2	125	185	12	3.9		90	4	150	240	17	4.1	
1001–2000	75	3	150	225	15	4.3		115	6	200	315	23	4.8	
2001–3000	75	3	175	250	17	4.4		130	7	235	365	27	5.0	
3001–4000	90	4	170	260	18	4.6		130	7	255	385	29	5.1	
4001–5000	90	4	180	270	19	4.7		140	8	270	410	31	5.2	
5001–7000	90	4	205	295	21	4.9		140	8	315	455	35	5.3	
7001–10,000	90	4	220	310	22	5.0		140	8	340	480	37	5.4	
10,001–20,000	100	5	230	330	24	5.1		155	9	370	525	41	5.6	
20,001–50,000	100	5	280	380	28	5.2		165	10	405	570	45	5.7	
50,001–100,000	115	6	285	400	30	5.3		165	10	440	605	48	6.2	

n_1 = Size of First Sample; n_2 = Size of Second Sample; entry of "All" indicates that each piece in lot is to be inspected
c_1 = Allowable Defect Number for First Sample; c_2 = Allowable Defect Number for First and Second Samples Combined.
AOQL = Average Outgoing Quality Limit.

TABLE III: SINGLE SAMPLING LOT INSPECTION TABLES—BASED ON STATED VALUES OF "AVERAGE OUTGOING QUALITY LIMIT"

TABLE SA-0.1

AVERAGE OUTGOING QUALITY LIMIT = 0.1%

Process Average %	0–.002			.003–.020			.021–.040			.041–.060			.061–.080			.081–.100		
Lot Size	n	c	p_t%	n	c	p_t%	n	c	p_t%	n	c	p_t%	n	c	p_t%	n	c	p_t%
1–75	All	0	–	All	0	–	All	0	–	All	0	–	All	0	–	All	0	–
76–95	75	0	1.5	75	0	1.5	75	0	1.5	75	0	1.5	75	0	1.5	75	0	1.5
96–130	95	0	1.4	95	0	1.4	95	0	1.4	95	0	1.4	95	0	1.4	95	0	1.4
131–200	130	0	1.2	130	0	1.2	130	0	1.2	130	0	1.2	130	0	1.2	130	0	1.2
201–300	165	0	1.1	165	0	1.1	165	0	1.1	165	0	1.1	165	0	1.1	165	0	1.1
301–400	190	0	.96	190	0	.96	190	0	.96	190	0	.96	190	0	.96	190	0	.96
401–500	210	0	.91	210	0	.91	210	0	.91	210	0	.91	210	0	.91	210	0	.91
501–600	230	0	.86	230	0	.86	230	0	.86	230	0	.86	230	0	.86	230	0	.86
601–800	250	0	.81	250	0	.81	250	0	.81	250	0	.81	250	0	.81	250	0	.81
801–1000	270	0	.76	270	0	.76	270	0	.76	270	0	.76	270	0	.76	270	0	.76
1001–2000	310	0	.71	310	0	.71	310	0	.71	310	0	.71	310	0	.71	310	0	.71
2001–3000	330	0	.67	330	0	.67	330	0	.67	330	0	.67	330	0	.67	655	1	.64
3001–4000	340	0	.64	340	0	.64	340	0	.64	695	1	.59	695	1	.59	695	1	.59
4001–5000	345	0	.62	345	0	.62	345	0	.62	720	1	.54	720	1	.54	720	1	.54
5001–7000	350	0	.61	350	0	.61	750	1	.51	750	1	.51	750	1	.51	750	1	.51
7001–10,000	355	0	.60	355	0	.60	775	1	.49	775	1	.49	775	1	.49	1210	2	.44
10,001–20,000	360	0	.59	810	1	.48	810	1	.48	1280	2	.42	1280	2	.42	1770	3	.38
20,001–50,000	365	0	.58	830	1	.47	1330	2	.41	1870	3	.37	2420	4	.34	2980	5	.33
50,001–100,000	365	0	.58	835	1	.46	1350	2	.40	2480	4	.33	3070	5	.32	4270	7	.30

TABLE SA-0.25

AVERAGE OUTGOING QUALITY LIMIT = 0.25%

Process Average %	0–.005			.006–.050			.051–.100			.101–.150			.151–.200			.201–.250		
Lot Size	n	c	p_t%	n	c	p_t%	n	c	p_t%	n	c	p_t%	n	c	p_t%	n	c	p_t%
1–60	All	0	–	All	0	–	All	0	–	All	0	–	All	0	–	All	0	–
61–100	60	0	2.5	60	0	2.5	60	0	2.5	60	0	2.5	60	0	2.5	60	0	2.5
101–200	85	0	2.1	85	0	2.1	85	0	2.1	85	0	2.1	85	0	2.1	85	0	2.1
201–300	100	0	1.9	100	0	1.9	100	0	1.9	100	0	1.9	100	0	1.9	100	0	1.9
301–400	110	0	1.8	110	0	1.8	110	0	1.8	110	0	1.8	110	0	1.8	110	0	1.8
401–500	115	0	1.8	115	0	1.8	115	0	1.8	115	0	1.8	115	0	1.8	115	0	1.8
501–600	120	0	1.7	120	0	1.7	120	0	1.7	120	0	1.7	120	0	1.7	120	0	1.7
601–800	125	0	1.7	125	0	1.7	125	0	1.7	125	0	1.7	125	0	1.7	125	0	1.7
801–1000	130	0	1.7	130	0	1.7	130	0	1.7	130	0	1.7	130	0	1.7	250	1	1.4
1001–2000	135	0	1.6	135	0	1.6	135	0	1.6	290	1	1.3	290	1	1.3	290	1	1.3
2001–3000	140	0	1.6	140	0	1.6	300	1	1.3	300	1	1.3	300	1	1.3	300	1	1.3
3001–4000	140	0	1.6	140	0	1.6	310	1	1.3	310	1	1.3	310	1	1.3	485	2	1.1
4001–5000	145	0	1.6	145	0	1.6	315	1	1.2	315	1	1.2	495	2	1.1	495	2	1.1
5001–7000	145	0	1.6	320	1	1.2	320	1	1.2	510	2	1.0	510	2	1.0	700	3	.94
7001–10,000	145	0	1.6	325	1	1.2	325	1	1.2	520	2	1.0	720	3	.91	720	3	.91
10,001–20,000	145	0	1.6	330	1	1.2	535	2	1.0	750	3	.89	970	4	.81	1190	5	.75
20,001–50,000	145	0	1.6	335	1	1.2	545	2	1.0	995	4	.80	1240	5	.74	1980	8	.66
50,001–100,000	335	1	1.2	545	2	1.0	775	3	.87	1250	5	.73	1750	7	.67	2810	11	.62

n = Size of Sample; entry of "All" indicates that each piece in lot is to be inspected.
c = Allowable Defect Number for Sample.
p_t = Lot Tolerance Per Cent Defective corresponding to a Consumer's Risk (P_C) = 0.10.

TABLE III CONT'D: SINGLE SAMPLING LOT INSPECTION TABLES—BASED ON STATED VALUES OF "AVERAGE OUTGOING QUALITY LIMIT"

TABLE SA-0.5

AVERAGE OUTGOING QUALITY LIMIT = 0.5%

Process Average %	0-.010			.011-.10			.11-.20			.21-.30			.31-.40			.41-.50		
Lot Size	n	c	p_t%	n	c	p_t%	n	c	p_t%	n	c	p_t%	n	c	p_t%	n	c	p_t%
1-30	All	0	-	All	0	-	All	0	-	All	0	-	All	0	-	All	0	-
31-50	30	0	5.0	30	0	5.0	30	0	5.0	30	0	5.0	30	0	5.0	30	0	5.0
51-100	42	0	4.2	42	0	4.2	42	0	4.2	42	0	4.2	42	0	4.2	42	0	4.2
101-200	55	0	3.6	55	0	3.6	55	0	3.6	55	0	3.6	55	0	3.6	55	0	3.6
201-300	60	0	3.4	60	0	3.4	60	0	3.4	60	0	3.4	60	0	3.4	60	0	3.4
301-400	60	0	3.5	60	0	3.5	60	0	3.5	60	0	3.5	60	0	3.5	60	0	3.5
401-500	65	0	3.3	65	0	3.3	65	0	3.3	65	0	3.3	65	0	3.3	125	1	2.9
501-600	65	0	3.3	65	0	3.3	65	0	3.3	65	0	3.3	130	1	2.7	130	1	2.7
601-800	65	0	3.4	65	0	3.4	65	0	3.4	140	1	2.6	140	1	2.6	140	1	2.6
801-1000	70	0	3.2	70	0	3.2	70	0	3.2	145	1	2.6	145	1	2.6	145	1	2.6
1001-2000	70	0	3.2	70	0	3.2	155	1	2.5	155	1	2.5	155	1	2.5	240	2	2.2
2001-3000	70	0	3.3	70	0	3.3	160	1	2.4	160	1	2.4	250	2	2.1	250	2	2.1
3001-4000	70	0	3.3	160	1	2.4	160	1	2.4	255	2	2.1	255	2	2.1	355	3	1.9
4001-5000	75	0	3.0	165	1	2.4	165	1	2.4	260	2	2.0	360	3	1.9	460	4	1.7
5001-7000	75	0	3.0	165	1	2.4	265	2	2.0	265	2	2.0	370	3	1.8	475	4	1.7
7001-10,000	75	0	3.1	165	1	2.4	265	2	2.0	375	3	1.8	485	4	1.7	595	5	1.6
10,001-20,000	75	0	3.1	165	1	2.4	270	2	1.9	380	3	1.7	615	5	1.5	855	7	1.4
20,001-50,000	170	1	2.3	275	2	1.9	390	3	1.7	625	5	1.5	875	7	1.3	1410	11	1.2
50,001-100,000	170	1	2.3	275	2	1.9	510	4	1.6	755	6	1.4	1290	10	1.2	2130	16	1.1

TABLE SA-0.75

AVERAGE OUTGOING QUALITY LIMIT = 0.75%

Process Average %	0-.015			.016-.15			.16-.30			.31-.45			.46-.60			.61-.75		
Lot Size	n	c	p_t%	n	c	p_t%	n	c	p_t%	n	c	p_t%	n	c	p_t%	n	c	p_t%
1-25	All	0	-	All	0	-	All	0	-	All	0	-	All	0	-	All	0	-
26-50	25	0	6.4	25	0	6.4	25	0	6.4	25	0	6.4	25	0	6.4	25	0	6.4
51-100	33	0	5.6	33	0	5.6	33	0	5.6	33	0	5.6	33	0	5.6	33	0	5.6
101-200	39	0	5.2	39	0	5.2	39	0	5.2	39	0	5.2	39	0	5.2	39	0	5.2
201-300	42	0	5.0	42	0	5.0	42	0	5.0	42	0	5.0	42	0	5.0	42	0	5.0
301-400	44	0	4.9	44	0	4.9	44	0	4.9	44	0	4.9	90	1	4.0	90	1	4.0
401-500	45	0	4.8	45	0	4.8	45	0	4.8	90	1	4.1	90	1	4.1	90	1	4.1
501-600	45	0	4.9	45	0	4.9	45	0	4.9	95	1	3.9	95	1	3.9	95	1	3.9
601-800	46	0	4.9	46	0	4.9	100	1	3.8	100	1	3.8	100	1	3.8	100	1	3.8
801-1000	47	0	4.8	47	0	4.8	100	1	3.8	100	1	3.8	100	1	3.8	155	2	3.2
1001-2000	48	0	4.7	48	0	4.7	105	1	3.7	105	1	3.7	170	2	3.1	170	2	3.1
2001-3000	48	0	4.7	110	1	3.5	110	1	3.5	170	2	3.1	170	2	3.1	240	3	2.8
3001-4000	48	0	4.7	110	1	3.5	110	1	3.5	175	2	3.1	245	3	2.7	315	4	2.5
4001-5000	49	0	4.6	110	1	3.6	175	2	3.1	175	2	3.1	245	3	2.7	320	4	2.5
5001-7000	49	0	4.6	110	1	3.6	180	2	3.0	250	3	2.7	325	4	2.5	400	5	2.3
7001-10,000	49	0	4.6	110	1	3.7	180	2	3.0	255	3	2.6	405	5	2.3	560	7	2.1
10,001-20,000	49	0	4.6	110	1	3.7	255	3	2.6	335	4	2.4	495	6	2.1	750	9	1.9
20,001-50,000	110	1	3.7	180	2	3.0	260	3	2.6	420	5	2.2	675	8	1.9	1130	13	1.6
50,001-100,000	110	1	3.7	185	2	2.9	335	4	2.4	590	7	2.0	955	11	1.7	1720	19	1.5

n = Size of Sample; entry of "All" indicates that each piece in lot is to be inspected.
c = Allowable Defect Number for Sample.
p_t = Lot Tolerance Per Cent Defective corresponding to a Consumer's Risk (P_c) = 0.10.

TABLE III CONT'D: SINGLE SAMPLING LOT INSPECTION TABLES—BASED ON STATED VALUES OF "AVERAGE OUTGOING QUALITY LIMIT"

TABLE SA-1.0
AVERAGE OUTGOING QUALITY LIMIT = 1.0%

Process Average %	0–.02			.03–.20			.21–.40			.41–.60			.61–.80			.81–1.00		
Lot Size	n	c	p_t%	n	c	p_t%	n	c	p_t%	n	c	p_t%	n	c	p_t%	n	c	p_t%
1–25	All	0	–	All	0	–	All	0	–	All	0	–	All	0	–	All	0	–
26–50	22	0	7.7	22	0	7.7	22	0	7.7	22	0	7.7	22	0	7.7	22	0	7.7
51–100	27	0	7.1	27	0	7.1	27	0	7.1	27	0	7.1	27	0	7.1	27	0	7.1
101–200	32	0	6.4	32	0	6.4	32	0	6.4	32	0	6.4	32	0	6.4	32	0	6.4
201–300	33	0	6.3	33	0	6.3	33	0	6.3	33	0	6.3	33	0	6.3	65	1	5.0
301–400	34	0	6.1	34	0	6.1	34	0	6.1	70	1	4.6	70	1	4.6	70	1	4.6
401–500	35	0	6.1	35	0	6.1	35	0	6.1	70	1	4.7	70	1	4.7	70	1	4.7
501–600	35	0	6.1	35	0	6.1	75	1	4.4	75	1	4.4	75	1	4.4	75	1	4.4
601–800	35	0	6.2	35	0	6.2	75	1	4.4	75	1	4.4	75	1	4.4	120	2	4.2
801–1000	35	0	6.3	35	0	6.3	80	1	4.4	80	1	4.4	120	2	4.3	120	2	4.3
1001–2000	36	0	6.2	80	1	4.5	80	1	4.5	130	2	4.0	130	2	4.0	180	3	3.7
2001–3000	36	0	6.2	80	1	4.6	80	1	4.6	130	2	4.0	185	3	3.6	235	4	3.3
3001–4000	36	0	6.2	80	1	4.7	135	2	3.9	135	2	3.9	185	3	3.6	295	5	3.1
4001–5000	36	0	6.2	85	1	4.6	135	2	3.9	190	3	3.5	245	4	3.2	300	5	3.1
5001–7000	37	0	6.1	85	1	4.6	135	2	3.9	190	3	3.5	305	5	3.0	420	7	2.8
7001–10,000	37	0	6.2	85	1	4.6	135	2	3.9	245	4	3.2	310	5	3.0	430	7	2.7
10,001–20,000	85	1	4.6	135	2	3.9	195	3	3.4	250	4	3.2	435	7	2.7	635	10	2.4
20,001–50,000	85	1	4.6	135	2	3.9	255	4	3.1	380	6	2.8	575	9	2.5	990	15	2.1
50,001–100,000	85	1	4.6	135	2	3.9	255	4	3.1	445	7	2.6	790	12	2.3	1520	22	1.9

TABLE SA-1.5
AVERAGE OUTGOING QUALITY LIMIT = 1.5%

Process Average %	0–.03			.04–.30			.31–.60			.61–.90			.91–1.20			1.21–1.50		
Lot Size	n	c	p_t%	n	c	p_t%	n	c	p_t%	n	c	p_t%	n	c	p_t%	n	c	p_t%
1–15	All	0	–	All	0	–	All	0	–	All	0	–	All	0	–	All	0	–
16–50	16	0	11.6	16	0	11.6	16	0	11.6	16	0	11.6	16	0	11.6	16	0	11.6
51–100	20	0	9.8	20	0	9.8	20	0	9.8	20	0	9.8	20	0	9.8	20	0	9.8
101–200	22	0	9.5	22	0	9.5	22	0	9.5	22	0	9.5	22	0	9.5	44	1	8.2
201–300	23	0	9.2	23	0	9.2	23	0	9.2	47	1	7.9	47	1	7.9	47	1	7.9
301–400	23	0	9.3	23	0	9.3	49	1	7.8	49	1	7.8	49	1	7.8	49	1	7.8
401–500	23	0	9.4	23	0	9.4	50	1	7.7	50	1	7.7	50	1	7.7	50	1	7.7
501–600	24	0	9.0	24	0	9.0	50	1	7.7	50	1	7.7	50	1	7.7	50	1	7.7
601–800	24	0	9.1	24	0	9.1	50	1	7.8	50	1	7.8	80	2	6.4	80	2	6.4
801–1000	24	0	9.1	55	1	7.0	55	1	7.0	85	2	6.2	85	2	6.2	85	2	6.2
1001–2000	24	0	9.1	55	1	7.0	55	1	7.0	85	2	6.2	120	3	5.4	155	4	5.0
2001–3000	24	0	9.2	55	1	7.1	90	2	5.9	125	3	5.3	160	4	4.9	200	5	4.6
3001–4000	24	0	9.2	55	1	7.1	90	2	5.9	125	3	5.3	165	4	4.8	240	6	4.4
4001–5000	24	0	9.2	55	1	7.1	90	2	5.9	125	3	5.3	205	5	4.6	280	7	4.2
5001–7000	24	0	9.2	55	1	7.1	90	2	5.9	165	4	4.8	205	5	4.6	325	8	4.0
7001–10,000	24	0	9.2	55	1	7.1	130	3	5.2	165	4	4.8	250	6	4.2	375	9	3.8
10,001–20,000	55	1	7.1	90	2	5.9	130	3	5.2	210	5	4.4	340	8	3.8	515	12	3.4
20,001–50,000	55	1	7.1	90	2	5.9	170	4	4.7	295	7	4.0	480	11	3.5	860	19	3.0
50,001–100,000	55	1	7.1	130	3	5.2	210	5	4.4	340	8	3.8	625	14	3.3	1120	24	2.8

n = Size of Sample; entry of "All" indicates that each piece in lot is to be inspected.
c = Allowable Defect Number for Sample.
p_t = Lot Tolerance Per Cent Defective corresponding to a Consumer's Risk (P_C) = 0.10.

TABLE III CONT'D: SINGLE SAMPLING LOT INSPECTION TABLES—BASED ON STATED VALUES OF "AVERAGE OUTGOING QUALITY LIMIT"

TABLE SA-2.0

AVERAGE OUTGOING QUALITY LIMIT = 2.0%

Process Average %	0–.04			.05–.40			.41–.80			.81–1.20			1.21–1.60			1.61–2.00		
Lot Size	n	c	p_t%	n	c	p_t%	n	c	p_t%	n	c	p_t%	n	c	p_t%	n	c	p_t%
1–15	All	0	–	All	0	–	All	0	–	All	0	–	All	0	–	All	0	–
16–50	14	0	13.6	14	0	13.6	14	0	13.6	14	0	13.6	14	0	13.6	14	0	13.6
51–100	16	0	12.4	16	0	12.4	16	0	12.4	16	0	12.4	16	0	12.4	16	0	12.4
101–200	17	0	12.2	17	0	12.2	17	0	12.2	17	0	12.2	35	1	10.5	35	1	10.5
201–300	17	0	12.3	17	0	12.3	17	0	12.3	37	1	10.2	37	1	10.2	37	1	10.2
301–400	18	0	11.8	18	0	11.8	38	1	10.0	38	1	10.0	38	1	10.0	60	2	8.5
401–500	18	0	11.9	18	0	11.9	39	1	9.8	39	1	9.8	60	2	8.6	60	2	8.6
501–600	18	0	11.9	18	0	11.9	39	1	9.8	39	1	9.8	60	2	8.6	60	2	8.6
601–800	18	0	11.9	40	1	9.6	40	1	9.6	65	2	8.0	65	2	8.0	85	3	7.5
801–1000	18	0	12.0	40	1	9.6	40	1	9.6	65	2	8.1	65	2	8.1	90	3	7.4
1001–2000	18	0	12.0	41	1	9.4	65	2	8.2	65	2	8.2	95	3	7.0	120	4	6.5
2001–3000	18	0	12.0	41	1	9.4	65	2	8.2	95	3	7.0	120	4	6.5	180	6	5.8
3001–4000	18	0	12.0	42	1	9.3	65	2	8.2	95	3	7.0	155	5	6.0	210	7	5.5
4001–5000	18	0	12.0	42	1	9.3	70	2	7.5	125	4	6.4	155	5	6.0	245	8	5.3
5001–7000	18	0	12.0	42	1	9.3	95	3	7.0	125	4	6.4	185	6	5.6	280	9	5.1
7001–10,000	42	1	9.3	70	2	7.5	95	3	7.0	155	5	6.0	220	7	5.4	350	11	4.8
10,001–20,000	42	1	9.3	70	2	7.6	95	3	7.0	190	6	5.6	290	9	4.9	460	14	4.4
20,001–50,000	42	1	9.3	70	2	7.6	125	4	6.4	220	7	5.4	395	12	4.5	720	21	3.9
50,001–100,000	42	1	9.3	95	3	7.0	160	5	5.9	290	9	4.9	505	15	4.2	955	27	3.7

TABLE SA-2.5

AVERAGE OUTGOING QUALITY LIMIT = 2.5%

Process Average %	0–.05			.06–.50			.51–1.00			1.01–1.50			1.51–2.00			2.01–2.50		
Lot Size	n	c	p_t%	n	c	p_t%	n	c	p_t%	n	c	p_t%	n	c	p_t%	n	c	p_t%
1–10	All	0	–	All	0	–	All	0	–	All	0	–	All	0	–	All	0	–
11–50	11	0	17.6	11	0	17.6	11	0	17.6	11	0	17.6	11	0	17.6	11	0	17.6
51–100	13	0	15.3	13	0	15.3	13	0	15.3	13	0	15.3	13	0	15.3	13	0	15.3
101–200	14	0	14.7	14	0	14.7	14	0	14.7	29	1	12.9	29	1	12.9	29	1	12.9
201–300	14	0	14.9	14	0	14.9	30	1	12.7	30	1	12.7	30	1	12.7	30	1	12.7
301–400	14	0	15.0	14	0	15.0	31	1	12.3	31	1	12.3	31	1	12.3	48	2	10.7
401–500	14	0	15.0	14	0	15.0	32	1	12.0	32	1	12.0	49	2	10.6	49	2	10.6
501–600	14	0	15.1	32	1	12.0	32	1	12.0	50	2	10.4	50	2	10.4	70	3	9.3
601–800	14	0	15.1	32	1	12.0	32	1	12.0	50	2	10.5	50	2	10.5	70	3	9.4
801–1000	15	0	14.2	33	1	11.7	33	1	11.7	50	2	10.6	70	3	9.4	90	4	8.5
1001–2000	15	0	14.2	33	1	11.7	55	2	9.3	75	3	8.8	95	4	8.0	120	5	7.6
2001–3000	15	0	14.2	33	1	11.8	55	2	9.4	75	3	8.8	120	5	7.6	145	6	7.2
3001–4000	15	0	14.3	33	1	11.8	55	2	9.5	100	4	7.9	125	5	7.4	195	8	6.6
4001–5000	15	0	14.3	33	1	11.8	75	3	8.9	100	4	7.9	150	6	7.0	225	9	6.3
5001–7000	33	1	11.8	55	2	9.7	75	3	8.9	125	5	7.4	175	7	6.7	250	10	6.1
7001–10,000	34	1	11.4	55	2	9.7	75	3	8.9	125	5	7.4	200	8	6.4	310	12	5.8
10,001–20,000	34	1	11.4	55	2	9.7	100	4	8.0	150	6	7.0	260	10	6.0	425	16	5.3
20,001–50,000	34	1	11.4	55	2	9.7	100	4	8.0	180	7	6.7	345	13	5.5	640	23	4.8
50,001–100,000	34	1	11.4	80	3	8.4	125	5	7.4	235	9	6.1	435	16	5.2	800	28	4.5

n = Size of Sample; entry of "All" indicates that each piece in lot is to be inspected.
c = Allowable Defect Number for Sample.
p_t = Lot Tolerance Per Cent Defective corresponding to a Consumer's Risk (P_C) = 0.10.

TABLE III CONT'D: SINGLE SAMPLING LOT INSPECTION TABLES—BASED ON STATED VALUES OF "AVERAGE OUTGOING QUALITY LIMIT"

TABLE SA-3.0

AVERAGE OUTGOING QUALITY LIMIT = 3.0%

Process Average %	0–.06			.07–.60			.61–1.20			1.21–1.80			1.81–2.40			2.41–3.00		
Lot Size	n	c	p_t%	n	c	p_t%	n	c	p_t%	n	c	p_t%	n	c	p_t%	n	c	p_t%
1–10	All	0	–	All	0	–	All	0	–	All	0	–	All	0	–	All	0	–
11–50	10	0	19.0	10	0	19.0	10	0	19.0	10	0	19.0	10	0	19.0	10	0	19.0
51–100	11	0	18.0	11	0	18.0	11	0	18.0	11	0	18.0	11	0	18.0	22	1	16.4
101–200	12	0	17.0	12	0	17.0	12	0	17.0	25	1	15.1	25	1	15.1	25	1	15.1
201–300	12	0	17.0	12	0	17.0	26	1	14.6	26	1	14.6	26	1	14.6	40	2	12.8
301–400	12	0	17.1	12	0	17.1	26	1	14.7	26	1	14.7	41	2	12.7	41	2	12.7
401–500	12	0	17.2	27	1	14.1	27	1	14.1	42	2	12.4	42	2	12.4	42	2	12.4
501–600	12	0	17.3	27	1	14.2	27	1	14.2	42	2	12.4	42	2	12.4	60	3	10.8
601–800	12	0	17.3	27	1	14.2	27	1	14.2	43	2	12.1	60	3	10.9	60	3	10.9
801–1000	12	0	17.4	27	1	14.2	44	2	11.8	44	2	11.8	60	3	11.0	80	4	9.8
1001–2000	12	0	17.5	28	1	13.8	45	2	11.7	65	3	10.2	80	4	9.8	100	5	9.1
2001–3000	12	0	17.5	28	1	13.8	45	2	11.7	65	3	10.2	100	5	9.1	140	7	8.2
3001–4000	12	0	17.5	28	1	13.8	65	3	10.3	85	4	9.5	125	6	8.4	165	8	7.8
4001–5000	28	1	13.8	28	1	13.8	65	3	10.3	85	4	9.5	125	6	8.4	210	10	7.4
5001–7000	28	1	13.8	45	2	11.8	65	3	10.3	105	5	8.8	145	7	8.1	235	11	7.1
7001–10,000	28	1	13.9	46	2	11.6	65	3	10.3	105	5	8.8	170	8	7.6	280	13	6.8
10,001–20,000	28	1	13.9	46	2	11.7	85	4	9.5	125	6	8.4	215	10	7.2	380	17	6.2
20,001–50,000	28	1	13.9	65	3	10.3	105	5	8.8	170	8	7.6	310	14	6.5	560	24	5.7
50,001–100,000	28	1	13.9	65	3	10.3	125	6	8.4	215	10	7.2	385	17	6.2	690	29	5.4

TABLE SA-4.0

AVERAGE OUTGOING QUALITY LIMIT = 4.0%

Process Average %	0–.08			.09–.80			.81–1.60			1.61–2.40			2.41–3.20			3.21–4.00		
Lot Size	n	c	p_t%	n	c	p_t%	n	c	p_t%	n	c	p_t%	n	c	p_t%	n	c	p_t%
1–10	All	0	–	All	0	–	All	0	–	All	0	–	All	0	–	All	0	–
11–50	8	0	23.0	8	0	23.0	8	0	23.0	8	0	23.0	8	0	23.0	8	0	23.0
51–100	8	0	24.0	8	0	24.0	8	0	24.0	8	0	24.0	17	1	21.5	17	1	21.5
101–200	9	0	22.0	9	0	22.0	19	1	20.0	19	1	20.0	19	1	20.0	19	1	20.0
201–300	9	0	22.5	9	0	22.5	20	1	19.0	20	1	19.0	31	2	16.8	31	2	16.8
301–400	9	0	22.5	20	1	19.1	20	1	19.1	32	2	16.2	32	2	16.2	43	3	15.2
401–500	9	0	22.5	20	1	19.1	20	1	19.1	32	2	16.3	32	2	16.3	44	3	14.9
501–600	9	0	22.5	20	1	19.2	20	1	19.2	32	2	16.3	45	3	14.6	60	4	12.9
601–800	9	0	22.5	20	1	19.2	33	2	15.9	33	2	15.9	46	3	14.3	60	4	13.0
801–1000	9	0	22.5	21	1	18.3	33	2	16.0	46	3	14.3	60	4	13.0	75	5	12.2
1001–2000	9	0	22.5	21	1	18.4	34	2	15.6	47	3	14.1	75	5	12.2	105	7	11.0
2001–3000	9	0	22.5	21	1	18.4	34	2	15.6	60	4	13.2	90	6	11.3	125	8	10.4
3001–4000	21	1	18.4	21	1	18.4	48	3	13.8	65	4	12.2	110	7	10.7	155	10	9.8
4001–5000	21	1	18.5	34	2	15.7	48	3	13.9	80	5	11.6	110	7	10.8	175	11	9.5
5001–7000	21	1	18.5	34	2	15.7	48	3	13.9	80	5	11.6	125	8	10.4	210	13	9.0
7001–10,000	21	1	18.5	34	2	15.7	65	4	12.3	95	6	11.1	145	9	9.8	245	15	8.6
10,001–20,000	21	1	18.5	34	2	15.7	65	4	12.3	110	7	10.8	195	12	9.0	340	20	7.9
20,001–50,000	21	1	18.5	49	3	13.6	80	5	11.6	145	9	9.8	250	15	8.5	460	26	7.4
50,001–100,000	21	1	18.5	49	3	13.6	95	6	11.1	165	10	9.6	310	18	8.0	540	30	7.1

n = Size of Sample; entry of "All" indicates that each piece in lot is to be inspected.
c = Allowable Defect Number for Sample.
p_t = Lot Tolerance Per Cent Defective corresponding to a Consumer's Risk (P_C) = 0.10.

TABLE III CONT'D: SINGLE SAMPLING LOT INSPECTION TABLES—BASED ON STATED VALUES OF "AVERAGE OUTGOING QUALITY LIMIT"

TABLE SA-5.0
AVERAGE OUTGOING QUALITY LIMIT = 5.0%

Process Average %	0–.10			.11–1.00			1.01–2.00			2.01–3.00			3.01–4.00			4.01–5.00		
Lot Size	n	c	p_t%	n	c	p_t%	n	c	p_t%	n	c	p_t%	n	c	p_t%	n	c	p_t%
1–5	All	0	–	All	0	–	All	0	–	All	0	–	All	0	–	All	0	–
6–50	6	0	30.5	6	0	30.5	6	0	30.5	6	0	30.5	6	0	30.5	6	0	30.5
51–100	7	0	27.0	7	0	27.0	7	0	27.0	14	1	26.5	14	1	26.5	14	1	26.5
101–200	7	0	27.5	7	0	27.5	16	1	24.0	16	1	24.0	16	1	24.0	24	2	21.5
201–300	7	0	27.5	16	1	24.0	16	1	24.0	16	1	24.0	25	2	21.0	25	2	21.0
301–400	7	0	27.5	16	1	24.0	16	1	24.0	26	2	20.0	26	2	20.0	35	3	18.8
401–500	7	0	27.5	16	1	24.0	16	1	24.0	26	2	20.0	36	3	18.3	46	4	17.0
501–600	7	0	28.0	16	1	24.0	26	2	20.0	26	2	20.0	37	3	17.9	47	4	16.6
601–800	7	0	28.0	16	1	24.0	27	2	19.4	37	3	17.9	48	4	16.3	60	5	15.2
801–1000	7	0	28.0	17	1	22.5	27	2	19.5	37	3	17.9	48	4	16.3	70	6	14.3
1001–2000	7	0	28.0	17	1	23.0	27	2	19.6	38	3	17.6	60	5	15.3	85	7	13.7
2001–3000	7	0	28.0	17	1	23.0	38	3	17.6	50	4	15.8	75	6	13.9	125	10	12.3
3001–4000	17	1	23.0	27	2	19.6	39	3	17.0	60	5	15.4	85	7	13.8	140	11	11.8
4001–5000	17	1	23.0	27	2	19.6	39	3	17.0	65	5	14.2	100	8	12.9	155	12	11.6
5001–7000	17	1	23.0	27	2	19.7	39	3	17.1	75	6	13.9	115	9	12.3	185	14	11.0
7001–10,000	17	1	23.0	27	2	19.7	50	4	15.9	75	6	14.0	130	10	12.0	225	17	10.4
10,001–20,000	17	1	23.0	27	2	19.7	50	4	15.9	90	7	13.1	170	13	11.0	305	22	9.6
20,001–50,000	17	1	23.0	39	3	17.1	65	5	14.3	115	9	12.3	215	16	10.4	400	28	9.0
50,001–100,000	17	1	23.0	39	3	17.1	75	6	14.0	145	11	11.6	275	20	9.8	450	31	8.8

TABLE SA-7.0
AVERAGE OUTGOING QUALITY LIMIT = 7.0%

Process Average %	0–.14			.15–1.40			1.41–2.80			2.81–4.20			4.21–5.60			5.61–7.00		
Lot Size	n	c	p_t%	n	c	p_t%	n	c	p_t%	n	c	p_t%	n	c	p_t%	n	c	p_t%
1–5	All	0	–	All	0	–	All	0	–	All	0	–	All	0	–	All	0	–
6–50	5	0	35.5	5	0	35.5	5	0	35.5	5	0	35.5	5	0	35.5	5	0	35.5
51–100	5	0	36.0	5	0	36.0	5	0	36.0	11	1	28.5	11	1	28.5	11	1	28.5
101–200	5	0	36.5	5	0	36.5	11	1	30.5	11	1	30.5	18	2	26.5	18	2	26.5
201–300	5	0	36.5	12	1	28.5	12	1	28.5	18	2	26.5	18	2	26.5	25	3	26.0
301–400	5	0	37.0	12	1	28.5	12	1	28.5	19	2	25.5	26	3	25.0	33	4	23.5
401–500	5	0	37.0	12	1	28.5	19	2	25.5	19	2	25.5	26	3	25.0	34	4	23.0
501–600	5	0	37.0	12	1	28.5	19	2	25.5	27	3	24.5	34	4	23.0	42	5	21.5
601–800	5	0	37.0	12	1	29.0	19	2	25.5	27	3	24.5	35	4	22.5	50	6	20.5
801–1000	5	0	37.0	12	1	29.0	19	2	25.5	27	3	24.5	43	5	21.5	60	7	19.3
1001–2000	5	0	37.0	12	1	29.0	27	3	24.5	36	4	22.0	50	6	21.0	70	8	17.7
2001–3000	12	1	29.0	19	2	25.5	28	3	23.5	45	5	20.5	60	7	19.6	100	11	16.5
3001–4000	12	1	29.0	20	2	24.5	28	3	24.0	45	5	20.5	70	8	18.1	120	13	15.8
4001–5000	12	1	29.0	20	2	24.5	36	4	22.0	55	6	19.0	80	9	17.3	140	15	15.1
5001–7000	12	1	29.0	20	2	24.5	36	4	22.0	55	6	19.1	90	10	16.8	160	17	14.6
7001–10,000	12	1	29.0	20	2	24.5	36	4	22.0	65	7	18.4	110	12	15.9	195	20	13.9
10,001–20,000	12	1	29.0	28	3	24.0	45	5	20.5	75	8	17.8	135	14	15.2	240	24	13.2
20,001–50,000	12	1	29.0	28	3	24.0	55	6	19.2	95	10	16.6	175	18	14.1	310	30	12.4
50,001–100,000	12	1	29.0	28	3	24.0	55	6	19.2	115	12	15.8	210	21	13.4	355	34	12.1

n = Size of Sample; entry of "All" indicates that each piece in lot is to be inspected.
c = Allowable Defect Number for Sample.
p_t = Lot Tolerance Per Cent Defective corresponding to a Consumer's Risk (P_C) = 0.10.

TABLE III CONT'D: SINGLE SAMPLING LOT INSPECTION TABLES—BASED ON STATED VALUES OF "AVERAGE OUTGOING QUALITY LIMIT"

TABLE SA-10.0

AVERAGE OUTGOING QUALITY LIMIT = 10.0%

Process Average %	0–.20			.21–2.00			2.01–4.00			4.01–6.00			6.01–8.00			8.01–10.00		
Lot Size	n	c	p_t%	n	c	p_t%	n	c	p_t%	n	c	p_t%	n	c	p_t%	n	c	p_t%
1–3	All	0	–	All	0	–	All	0	–	All	0	–	All	0	–	All	0	–
4–50	3	0	52.5	3	0	52.5	3	0	52.5	3	0	52.5	3	0	52.5	7	1	43.5
51–100	4	0	43.0	4	0	43.0	8	1	40.0	8	1	40.0	8	1	40.0	12	2	37.5
101–200	4	0	43.5	8	1	40.0	8	1	40.0	13	2	35.5	13	2	35.5	18	3	33.0
201–300	4	0	43.5	8	1	40.5	8	1	40.5	13	2	35.5	18	3	33.0	23	4	32.0
301–400	4	0	43.5	8	1	40.5	13	2	35.5	13	2	35.5	24	4	30.0	29	5	30.0
401–500	4	0	43.5	8	1	40.5	13	2	36.0	19	3	31.5	24	4	30.0	30	5	29.5
501–600	4	0	43.5	8	1	40.5	13	2	36.0	19	3	31.5	24	4	30.5	36	6	28.5
601–800	4	0	43.5	8	1	40.5	13	2	36.0	19	3	31.5	31	5	29.5	42	7	27.5
801–1000	4	0	44.0	8	1	40.5	14	2	33.5	25	4	30.0	37	6	28.0	49	8	26.5
1001–2000	8	1	40.5	14	2	33.5	19	3	32.0	31	5	30.0	44	7	26.5	65	10	23.5
2001–3000	8	1	40.5	14	2	33.5	19	3	32.0	31	5	30.0	50	8	26.0	85	13	22.5
3001–4000	8	1	40.5	14	2	33.5	25	4	30.0	38	6	27.5	65	10	24.0	100	15	21.5
4001–5000	8	1	40.5	14	2	33.5	25	4	30.0	38	6	27.5	65	10	24.0	120	18	20.5
5001–7000	8	1	40.5	14	2	33.5	25	4	30.0	44	7	27.0	80	12	22.5	135	20	19.8
7001–10,000	8	1	40.5	14	2	33.5	32	5	29.0	50	8	26.0	85	13	22.5	160	23	19.2
10,001–20,000	8	1	40.5	19	3	32.0	32	5	29.0	60	9	24.5	110	16	21.0	190	27	18.3
20,001–50,000	8	1	40.5	19	3	32.0	38	6	27.5	70	11	23.0	130	19	19.7	225	31	17.5
50,001–100,000	14	2	33.5	19	3	32.0	44	7	27.0	80	12	22.5	155	22	19.0	260	35	16.9

n = Size of Sample; entry of "All" indicates that each piece in lot is to be inspected.
c = Allowable Defect Number for Sample.
p_t = Lot Tolerance Per Cent Defective corresponding to a Consumer's Risk (P_C) = 0.10.

TABLE IV: DOUBLE SAMPLING LOT INSPECTION TABLES—BASED ON STATED VALUES OF "AVERAGE OUTGOING QUALITY LIMIT"

TABLE DA-0.1

AVERAGE OUTGOING QUALITY LIMIT = 0.1%

Process Average %	0–.002							.003–.020							.021–.040						
Lot Size	Trial 1		Trial 2				p_t %	Trial 1		Trial 2				p_t %	Trial 1		Trial 2				p_t %
	n_1	c_1	n_2	n_1+n_2	c_2			n_1	c_1	n_2	n_1+n_2	c_2			n_1	c_1	n_2	n_1+n_2	c_2		
1–75	All	0	–	–	–		–	All	0	–	–	–		–	All	0	–	–	–		–
76–95	75	0	–	–	–		1.5	75	0	–	–	–		1.5	75	0	–	–	–		1.5
96–130	95	0	–	–	–		1.4	95	0	–	–	–		1.4	95	0	–	–	–		1.4
131–200	130	0	–	–	–		1.2	130	0	–	–	–		1.2	130	0	–	–	–		1.2
201–300	165	0	–	–	–		1.1	165	0	–	–	–		1.1	165	0	–	–	–		1.1
301–350	190	0	–	–	–		.96	190	0	–	–	–		.96	190	0	–	–	–		.96
351–400	225	0	95	320	1		.86	225	0	95	320	1		.86	225	0	95	320	1		.86
401–500	250	0	120	370	1		.80	250	0	120	370	1		.80	250	0	120	370	1		.80
501–600	275	0	130	405	1		.77	275	0	130	405	1		.77	275	0	130	405	1		.77
601–800	310	0	155	465	1		.71	310	0	155	465	1		.71	310	0	155	465	1		.71
801–1000	350	0	185	535	1		.66	350	0	185	535	1		.66	350	0	185	535	1		.66
1001–2000	430	0	240	670	1		.58	430	0	240	670	1		.58	430	0	240	670	1		.58
2001–3000	465	0	265	730	1		.56	465	0	265	730	1		.56	465	0	265	730	1		.56
3001–4000	495	0	285	780	1		.54	495	0	285	780	1		.54	540	0	570	1110	2		.49
4001–5000	505	0	295	800	1		.53	505	0	295	800	1		.53	555	0	615	1170	2		.48
5001–7000	520	0	320	840	1		.52	520	0	320	840	1		.52	590	0	660	1250	2		.46
7001–10,000	540	0	335	875	1		.51	625	0	715	1340	2		.44	625	0	715	1340	2		.44
10,001–20,000	555	0	345	900	1		.50	650	0	750	1400	2		.43	720	0	1150	1870	3		.38
20,001–50,000	660	0	760	1420	2		.42	660	0	760	1420	2		.42	770	0	1700	2470	4		.36
50,001–100,000	670	0	770	1440	2		.42	740	0	1230	1970	3		.38	805	0	1725	2530	4		.35

Process Average %	.041–.060							.061–.080							.081–.100						
Lot Size	Trial 1		Trial 2				p_t %	Trial 1		Trial 2				p_t %	Trial 1		Trial 2				p_t %
	n_1	c_1	n_2	n_1+n_2	c_2			n_1	c_1	n_2	n_1+n_2	c_2			n_1	c_1	n_2	n_1+n_2	c_2		
1–75	All	0	–	–	–		–	All	0	–	–	–		–	All	0	–	–	–		–
76–95	75	0	–	–	–		1.5	75	0	–	–	–		1.5	75	0	–	–	–		1.5
96–130	95	0	–	–	–		1.4	95	0	–	–	–		1.4	95	0	–	–	–		1.4
131–200	130	0	–	–	–		1.2	130	0	–	–	–		1.2	130	0	–	–	–		1.2
201–300	165	0	–	–	–		1.1	165	0	–	–	–		1.1	165	0	–	–	–		1.1
301–350	190	0	–	–	–		.96	190	0	–	–	–		.96	190	0	–	–	–		.96
351–400	225	0	95	320	1		.86	225	0	95	320	1		.86	225	0	95	320	1		.86
401–500	250	0	120	370	1		.80	250	0	120	370	1		.80	250	0	120	370	1		.80
501–600	275	0	130	405	1		.77	275	0	130	405	1		.77	275	0	130	405	1		.77
601–800	310	0	155	465	1		.71	310	0	155	465	1		.71	310	0	155	465	1		.71
801–1000	350	0	185	535	1		.66	350	0	185	535	1		.66	350	0	185	535	1		.66
1001–2000	430	0	240	670	1		.58	430	0	240	670	1		.58	475	0	450	925	2		.54
2001–3000	520	0	530	1050	2		.50	520	0	530	1050	2		.50	520	0	530	1050	2		.50
3001–4000	540	0	570	1110	2		.49	540	0	570	1110	2		.49	585	0	885	1470	3		.45
4001–5000	555	0	615	1170	2		.48	605	0	935	1540	3		.44	605	0	935	1540	3		.44
5001–7000	655	0	1045	1700	3		.41	655	0	1045	1700	3		.41	680	0	1360	2040	4		.40
7001–10,000	700	0	1120	1820	3		.39	700	0	1120	1820	3		.39	1250	1	1780	3030	6		.35
10,001–20,000	740	0	1530	2270	4		.37	1350	1	2020	3370	6		.33	1400	1	2420	3820	7		.32
20,001–50,000	1400	1	2170	3570	6		.32	1450	1	3030	4480	8		.31	2230	2	4650	6880	12		.27
50,001–100,000	1460	1	3060	4520	8		.31	2330	2	4910	7240	12		.26	3690	4	7580	11270	19		.24

n_1 = Size of First Sample; n_2 = Size of Second Sample; entry of "All" indicates that each piece in lot is to be inspected.
c_1 = Allowable Defect Number for First Sample; c_2 = Allowable Defect Number for First and Second Samples Combined.
p_t = Lot Tolerance Per Cent Defective corresponding to a Consumer's Risk (P_C) = 0.10.

TABLE IV CONT'D: DOUBLE SAMPLING LOT INSPECTION TABLES—BASED ON STATED VALUES OF "AVERAGE OUTGOING QUALITY LIMIT"

TABLE DA-0.25

AVERAGE OUTGOING QUALITY LIMIT = 0.25%

Process Average %	0-.005							.006-.050							.051-.100						
Lot Size	Trial 1		Trial 2				p_t %	Trial 1		Trial 2				p_t %	Trial 1		Trial 2				p_t %
	n_1	c_1	n_2	n_1+n_2	c_2			n_1	c_1	n_2	n_1+n_2	c_2			n_1	c_1	n_2	n_1+n_2	c_2		
1-60	All	0	–	–	–		–	All	0	–	–	–		–	All	0	–	–	–		–
61-100	60	0	–	–	–		2.5	60	0	–	–	–		2.5	60	0	–	–	–		2.5
101-200	85	0	–	–	–		2.1	85	0	–	–	–		2.1	85	0	–	–	–		2.1
201-300	120	0	65	185	1		1.8	120	0	65	185	1		1.8	120	0	65	185	1		1.8
301-400	135	0	70	205	1		1.7	135	0	70	205	1		1.7	135	0	70	205	1		1.7
401-500	145	0	80	225	1		1.6	145	0	80	225	1		1.6	145	0	80	225	1		1.6
501-600	160	0	90	250	1		1.5	160	0	90	250	1		1.5	160	0	90	250	1		1.5
601-800	165	0	95	260	1		1.5	165	0	95	260	1		1.5	165	0	95	260	1		1.5
801-1000	180	0	105	285	1		1.4	180	0	105	285	1		1.4	180	0	105	285	1		1.4
1001-2000	205	0	120	325	1		1.3	205	0	120	325	1		1.3	220	0	245	465	2		1.2
2001-3000	210	0	125	335	1		1.3	210	0	125	335	1		1.3	235	0	275	510	2		1.1
3001-4000	210	0	130	340	1		1.3	210	0	130	340	1		1.3	240	0	280	520	2		1.1
4001-5000	215	0	130	345	1		1.3	245	0	280	525	2		1.1	275	0	445	720	3		1.0
5001-7000	215	0	135	350	1		1.3	250	0	285	535	2		1.1	290	0	475	765	3		.95
7001-10,000	255	0	290	545	2		1.1	255	0	290	545	2		1.1	295	0	490	785	3		.94
10,001-20,000	260	0	295	555	2		1.1	260	0	295	555	2		1.1	330	0	730	1060	4		.83
20,001-50,000	265	0	300	565	2		1.0	305	0	505	810	3		.91	335	0	735	1070	4		.83
50,001-100,000	270	0	305	575	2		1.0	310	0	510	820	3		.91	350	0	930	1280	5		.80

Process Average %	.101-.150							.151-.200							.201-.250						
Lot Size	Trial 1		Trial 2				p_t %	Trial 1		Trial 2				p_t %	Trial 1		Trial 2				p_t %
	n_1	c_1	n_2	n_1+n_2	c_2			n_1	c_1	n_2	n_1+n_2	c_2			n_1	c_1	n_2	n_1+n_2	c_2		
1-60	All	0	–	–	–		–	All	0	–	–	–		–	All	0	–	–	–		–
61-100	60	0	–	–	–		2.5	60	0	–	–	–		2.5	60	0	–	–	–		2.5
101-200	85	0	–	–	–		2.1	85	0	–	–	–		2.1	85	0	–	–	–		2.1
201-300	120	0	65	185	1		1.8	120	0	65	185	1		1.8	120	0	65	185	1		1.8
301-400	135	0	70	205	1		1.7	135	0	70	205	1		1.7	135	0	70	205	1		1.7
401-500	145	0	80	225	1		1.6	145	0	80	225	1		1.6	145	0	80	225	1		1.6
501-600	160	0	90	250	1		1.5	160	0	90	250	1		1.5	175	0	160	335	2		1.4
601-800	165	0	95	260	1		1.5	195	0	185	380	2		1.3	195	0	185	380	2		1.3
801-1000	180	0	105	285	1		1.4	200	0	195	395	2		1.3	200	0	195	395	2		1.3
1001-2000	220	0	245	465	2		1.2	220	0	245	465	2		1.2	240	0	375	615	3		1.1
2001-3000	260	0	435	695	3		1.0	260	0	435	695	3		1.0	280	0	570	850	4		.96
3001-4000	270	0	440	710	3		1.0	290	0	600	890	4		.94	290	0	600	890	4		.94
4001-5000	275	0	445	720	3		1.0	300	0	615	915	4		.92	320	1	750	1270	6		.85
5001-7000	315	0	660	975	4		.88	345	1	795	1340	6		.82	355	1	965	1520	7		.80
7001-10,000	325	0	705	1030	4		.84	385	1	1045	1630	7		.76	420	1	1420	2040	9		.72
10,001-20,000	390	1	910	1500	6		.76	460	1	1530	2190	9		.68	520	3	2000	3220	13		.61
20,001-50,000	445	1	1355	2000	8		.70	590	2	2340	3330	13		.61	650	5	3500	5350	21		.55
50,001-100,000	465	1	1615	2280	9		.68	640	3	2910	4250	16		.56	730	8	6090	9020	33		.48

TABLE DA-0.5

AVERAGE OUTGOING QUALITY LIMIT = 0.5%

Process Average %	0-.010							.011-.10							.11-.20						
Lot Size	Trial 1		Trial 2				p_t %	Trial 1		Trial 2				p_t %	Trial 1		Trial 2				p_t %
	n_1	c_1	n_2	n_1+n_2	c_2			n_1	c_1	n_2	n_1+n_2	c_2			n_1	c_1	n_2	n_1+n_2	c_2		
1-30	All	0	–	–	–	–	–	All	0	–	–	–	–	–	All	0	–	–	–	–	–
31-50	30	0	–	–	–	5.0	5.0	30	0	–	–	–	5.0	5.0	30	0	–	–	–	5.0	5.0
51-75	40	0	–	–	–	4.6	4.6	40	0	–	–	–	4.6	4.6	40	0	–	–	–	4.6	4.6
76-100	47	0	23	70	1	4.4	4.4	47	0	23	70	1	4.4	4.4	47	0	23	70	1	4.4	4.4
101-150	60	0	30	90	1	3.8	3.8	60	0	30	90	1	3.8	3.8	60	0	30	90	1	3.8	3.8
151-200	70	0	35	105	1	3.3	3.3	70	0	35	105	1	3.3	3.3	70	0	35	105	1	3.3	3.3
201-300	80	0	45	125	1	3.0	3.0	80	0	45	125	1	3.0	3.0	80	0	45	125	1	3.0	3.0
301-400	85	0	50	135	1	2.9	2.9	85	0	50	135	1	2.9	2.9	85	0	50	135	1	2.9	2.9
401-500	90	0	55	145	1	2.8	2.8	90	0	55	145	1	2.8	2.8	90	0	55	145	1	2.8	2.8
501-600	95	0	55	150	1	2.8	2.8	95	0	55	150	1	2.8	2.8	95	0	55	150	1	2.8	2.8
601-800	100	0	55	155	1	2.7	2.7	100	0	55	155	1	2.7	2.7	110	0	115	225	2	2.4	2.4
801-1000	100	0	60	160	1	2.7	2.7	100	0	60	160	1	2.7	2.7	115	0	125	240	2	2.3	2.3
1001-2000	105	0	60	165	1	2.6	2.6	125	0	135	260	2	2.2	2.2	125	0	135	260	2	2.2	2.2
2001-3000	110	0	60	170	1	2.6	2.6	130	0	145	275	2	2.1	2.1	145	0	235	380	3	1.9	1.9
3001-4000	110	0	65	175	1	2.5	2.5	130	0	155	285	2	2.1	2.1	145	0	240	385	3	1.9	1.9
4001-5000	135	0	150	285	2	2.1	2.1	135	0	150	285	2	2.1	2.1	150	0	240	390	3	1.9	1.9
5001-7000	135	0	155	290	2	2.1	2.1	135	0	155	290	2	2.1	2.1	155	0	245	400	3	1.8	1.8
7001-10,000	135	0	160	295	2	2.1	2.1	135	0	160	295	2	2.1	2.1	175	0	375	550	4	1.6	1.6
10,001-20,000	140	0	160	300	2	2.0	2.0	155	0	250	405	3	1.8	1.8	185	0	500	685	5	1.5	1.5
20,001-50,000	140	0	165	305	2	2.0	2.0	155	0	255	410	3	1.8	1.8	185	0	505	690	5	1.5	1.5
50,001-100,000	140	0	170	310	2	2.0	2.0	155	0	260	415	3	1.8	1.8	325	1	495	820	6	1.4	1.4

Process Average %	.21-.30							.31-.40							.41-.50						
Lot Size	Trial 1		Trial 2				p_t %	Trial 1		Trial 2				p_t %	Trial 1		Trial 2				p_t %
	n_1	c_1	n_2	n_1+n_2	c_2			n_1	c_1	n_2	n_1+n_2	c_2			n_1	c_1	n_2	n_1+n_2	c_2		
1-30	All	0	–	–	–	–	–	All	0	–	–	–	–	–	All	0	–	–	–	–	–
31-50	30	0	–	–	–	5.0	5.0	30	0	–	–	–	5.0	5.0	30	0	–	–	–	5.0	5.0
51-75	40	0	–	–	–	4.6	4.6	40	0	–	–	–	4.6	4.6	40	0	–	–	–	4.6	4.6
76-100	47	0	23	70	1	4.4	4.4	47	0	23	70	1	4.4	4.4	47	0	23	70	1	4.4	4.4
101-150	60	0	30	90	1	3.8	3.8	60	0	30	90	1	3.8	3.8	60	0	30	90	1	3.8	3.8
151-200	70	0	35	105	1	3.3	3.3	70	0	35	105	1	3.3	3.3	70	0	35	105	1	3.3	3.3
201-300	80	0	45	125	1	3.0	3.0	80	0	45	125	1	3.0	3.0	80	0	45	125	1	3.0	3.0
301-400	85	0	50	135	1	2.9	2.9	95	0	90	185	2	2.7	2.7	95	0	90	185	2	2.7	2.7
401-500	100	0	100	200	2	2.6	2.6	100	0	100	200	2	2.6	2.6	100	0	100	200	2	2.6	2.6
501-600	105	0	105	210	2	2.5	2.5	105	0	105	210	2	2.5	2.5	105	0	105	210	2	2.5	2.5
601-800	110	0	115	225	2	2.4	2.4	110	0	115	225	2	2.4	2.4	120	0	180	300	3	2.2	2.2
801-1000	115	0	125	240	2	2.3	2.3	125	0	185	310	3	2.2	2.2	125	0	185	310	3	2.2	2.2
1001-2000	135	0	220	355	3	2.0	2.0	135	0	220	355	3	2.0	2.0	145	0	295	440	4	1.9	1.9
2001-3000	145	0	235	380	3	1.9	1.9	150	0	320	470	4	1.8	1.8	275	1	475	750	7	1.6	1.6
3001-4000	155	0	325	480	4	1.8	1.8	280	1	415	695	6	1.6	1.6	295	1	600	895	8	1.5	1.5
4001-5000	165	0	345	510	4	1.7	1.7	300	1	525	825	7	1.5	1.5	430	2	700	1130	10	1.4	1.4
5001-7000	175	0	455	630	5	1.6	1.6	310	1	670	980	8	1.4	1.4	460	2	860	1320	11	1.3	1.3
7001-10,000	300	1	460	760	6	1.5	1.5	465	2	785	1250	10	1.3	1.3	620	3	1120	1740	14	1.2	1.2
10,001-20,000	320	1	680	1000	8	1.4	1.4	495	2	1175	1670	13	1.2	1.2	740	4	1420	2160	18	1.2	1.2
20,001-50,000	350	1	930	1280	10	1.3	1.3	680	3	1490	2170	16	1.1	1.1	925	5	2085	3010	24	1.1	1.1
50,001-100,000	505	2	1075	1580	12	1.2	1.2	680	3	1810	2490	19	1.1	1.1	1550	9	3410	4960	38	.99	.99

n_1 = Size of First Sample; n_2 = Size of Second Sample; entry of "All" indicates that each piece in lot is to be inspected.
c_1 = Allowable Defect Number for First Sample; c_2 = Allowable Defect Number for First and Second Samples Combined.
p_t = Lot Tolerance Per Cent Defective corresponding to a Consumer's Risk (P_C) = 0.10

TABLE IV CONT'D: DOUBLE SAMPLING LOT INSPECTION TABLES—BASED ON STATED VALUES OF "AVERAGE OUTGOING QUALITY LIMIT"

TABLE DA-0.75

AVERAGE OUTGOING QUALITY LIMIT = 0.75%

Process Average %	0–.015						.016–.15						.16–.30						.31–.45						.46–.60						.61–.75					
Lot Size	Trial 1		Trial 2			Pt %	Trial 1		Trial 2			Pt %	Trial 1		Trial 2			Pt %	Trial 1		Trial 2			Pt %	Trial 1		Trial 2			Pt %	Trial 1		Trial 2			Pt %
	n_1	c_1	n_2	n_1+n_2	c_2		n_1	c_1	n_2	n_1+n_2	c_2		n_1	c_1	n_2	n_1+n_2	c_2		n_1	c_1	n_2	n_1+n_2	c_2		n_1	c_1	n_2	n_1+n_2	c_2		n_1	c_1	n_2	n_1+n_2	c_2	
1–25	All	0	–	–	–	–	All	0	–	–	–	–	All	0	–	–	–	–	All	0	–	–	–	–	All	0	–	–	–	–	All	0	–	–	–	–
26–50	25	0	–	–	–	6.4	25	0	–	–	–	6.4	25	0	–	–	–	6.4	25	0	–	–	–	6.4	25	0	–	–	–	6.4	25	0	–	–	–	6.4
51–75	35	0	15	50	1	6.0	35	0	15	50	1	6.0	35	0	15	50	1	6.0	35	0	15	50	1	6.0	35	0	15	50	1	6.0	35	0	15	50	1	6.0
76–100	39	0	21	60	1	5.6	39	0	21	60	1	5.6	39	0	21	60	1	5.6	39	0	21	60	1	5.6	39	0	21	60	1	5.6	39	0	21	60	1	5.6
101–200	55	0	30	85	1	4.5	55	0	30	85	1	4.5	55	0	30	85	1	4.5	55	0	30	85	1	4.5	55	0	30	85	1	4.5	55	0	30	85	1	4.5
201–300	60	0	30	90	1	4.3	60	0	30	90	1	4.3	60	0	30	90	1	4.3	60	0	30	90	1	4.3	60	0	30	90	1	4.3	60	0	30	90	1	4.3
301–400	60	0	35	95	1	4.2	60	0	35	95	1	4.2	60	0	35	95	1	4.2	70	0	70	140	2	3.8	70	0	70	140	2	3.8	70	0	70	140	2	3.8
401–500	65	0	35	100	1	4.1	65	0	35	100	1	4.1	70	0	75	145	2	3.7	70	0	75	145	2	3.7	70	0	75	145	2	3.7	70	0	75	145	2	3.7
501–600	65	0	40	105	1	4.0	65	0	40	105	1	4.0	75	0	80	155	2	3.6	75	0	80	155	2	3.6	75	0	80	155	2	3.6	80	0	120	200	3	3.3
601–800	70	0	40	110	1	3.9	70	0	40	110	1	3.9	75	0	85	160	2	3.5	75	0	85	160	2	3.5	85	0	130	215	3	3.2	85	0	130	215	3	3.2
801–1000	70	0	40	110	1	3.9	70	0	40	110	1	3.9	80	0	90	170	2	3.4	85	0	140	225	3	3.1	85	0	140	225	3	3.1	95	0	185	280	4	2.9
1001–2000	75	0	40	115	1	3.8	85	0	90	175	2	3.3	95	0	155	250	3	2.9	95	0	155	250	3	2.9	100	0	215	315	4	2.7	175	1	265	440	6	2.5
2001–3000	75	0	40	115	1	3.8	85	0	100	185	2	3.2	100	0	160	260	3	2.8	105	0	230	335	4	2.6	185	1	280	465	6	2.4	205	1	405	610	8	2.2
3001–4000	90	0	105	195	2	3.1	90	0	105	195	2	3.1	100	0	160	260	3	2.8	110	0	290	400	5	2.5	195	1	345	540	7	2.3	285	2	475	760	10	2.1
4001–5000	90	0	105	195	2	3.1	90	0	105	195	2	3.1	105	0	235	340	4	2.6	195	1	300	495	6	2.3	210	1	415	625	8	2.2	300	2	560	860	11	2.0
5001–7000	90	0	105	195	2	3.1	90	0	105	195	2	3.1	110	0	245	355	4	2.5	200	1	375	575	7	2.2	300	2	510	810	10	2.0	390	3	710	1100	14	1.9
7001–10,000	90	0	110	200	2	3.0	100	0	165	265	3	2.8	110	0	245	355	4	2.5	205	1	375	580	7	2.2	320	2	665	985	12	1.9	415	3	955	1370	17	1.8
10,001–20,000	90	0	110	200	2	3.0	100	0	165	265	3	2.8	120	0	325	445	5	2.3	215	1	455	670	8	2.1	335	2	855	1190	14	1.8	600	5	1200	1800	22	1.7
20,001–50,000	90	0	110	200	2	3.0	105	0	165	270	3	2.7	130	0	335	465	5	2.2	225	1	605	830	10	2.0	440	3	1030	1470	17	1.7	800	7	1640	2440	29	1.6
50,001–100,000	95	0	110	205	2	3.0	110	0	250	360	4	2.5	215	1	395	610	7	2.1	335	2	725	1060	12	1.8	555	4	1305	1860	21	1.6	1025	9	2405	3430	40	1.5

TABLE DA-1

AVERAGE OUTGOING QUALITY LIMIT = 1.0%

Process Average %	0–.02							.03–.20							.21–.40							.41–.60							.61–.80							.81–1.00						
Lot Size	Trial 1		Trial 2				p_t %	Trial 1		Trial 2				p_t %	Trial 1		Trial 2				p_t %	Trial 1		Trial 2				p_t %	Trial 1		Trial 2				p_t %	Trial 1		Trial 2				p_t %
	n_1	c_1	n_2	n_1+n_2	c_2			n_1	c_1	n_2	n_1+n_2	c_2			n_1	c_1	n_2	n_1+n_2	c_2			n_1	c_1	n_2	n_1+n_2	c_2			n_1	c_1	n_2	n_1+n_2	c_2			n_1	c_1	n_2	n_1+n_2	c_2		
1–25	All	0	–	–	–	–		All	0	–	–	–	–		All	0	–	–	–	–		All	0	–	–	–	–		All	0	–	–	–	–		All	0	–	–	–	–	
26–50	22	0	–	–	–	7.7		22	0	–	–	–	7.7		22	0	–	–	–	7.7		22	0	–	–	–	7.7		22	0	–	–	–	7.7		22	0	–	–	–	7.7	
51–100	33	0	17	50	1	6.9		33	0	17	50	1	6.9		33	0	17	50	1	6.9		33	0	17	50	1	6.9		33	0	17	50	1	6.9		33	0	17	50	1	6.9	
101–200	43	0	22	65	1	5.8		43	0	22	65	1	5.8		43	0	22	65	1	5.8		43	0	22	65	1	5.8		43	0	22	65	1	5.8		47	0	43	90	2	5.4	
201–300	47	0	28	75	1	5.5		47	0	28	75	1	5.5		47	0	28	75	1	5.5		55	0	50	105	2	4.9		55	0	50	105	2	4.9		55	0	50	105	2	4.9	
301–400	49	0	31	80	1	5.4		49	0	31	80	1	5.4		55	0	60	115	2	4.8		55	0	60	115	2	4.8		55	0	60	115	2	4.8		60	0	80	140	3	4.5	
401–500	50	0	30	80	1	5.4		50	0	30	80	1	5.4		55	0	65	120	2	4.7		55	0	65	120	2	4.7		60	0	95	155	3	4.3		60	0	95	155	3	4.3	
501–600	50	0	30	80	1	5.4		50	0	30	80	1	5.4		60	0	65	125	2	4.6		60	0	65	125	2	4.6		65	0	100	165	3	4.2		65	0	100	165	3	4.2	
601–800	50	0	35	85	1	5.3		60	0	70	130	2	4.5		60	0	70	130	2	4.5		65	0	105	170	3	4.1		65	0	105	170	3	4.1		70	0	140	210	4	3.9	
801–1000	55	0	30	85	1	5.2		60	0	75	135	2	4.4		60	0	75	135	2	4.4		65	0	110	175	3	4.0		70	0	150	220	4	3.8		125	1	180	305	6	3.5	
1001–2000	55	0	35	90	1	5.1		65	0	75	140	2	4.3		75	0	120	195	3	3.8		80	0	165	245	4	3.7		135	1	200	335	6	3.3		140	1	245	385	7	3.2	
2001–3000	65	0	80	145	2	4.2		65	0	80	145	2	4.2		75	0	125	200	3	3.7		80	0	170	250	4	3.6		150	1	265	415	7	3.0		215	2	355	570	10	2.8	
3001–4000	70	0	80	150	2	4.1		70	0	80	150	2	4.1		80	0	175	255	4	3.5		85	0	220	305	5	3.3		160	1	330	490	8	2.8		225	2	455	680	12	2.7	
4001–5000	70	0	80	150	2	4.1		70	0	80	150	2	4.1		80	0	180	260	4	3.4		145	1	225	370	6	3.1		225	2	375	600	10	2.7		240	2	595	835	14	2.5	
5001–7000	70	0	80	150	2	4.1		75	0	125	200	3	3.7		80	0	180	260	4	3.4		155	1	285	440	7	2.9		235	2	440	675	11	2.6		310	3	665	975	16	2.4	
7001–10,000	70	0	80	150	2	4.1		80	0	125	205	3	3.6		85	0	180	265	4	3.3		165	1	355	520	8	2.7		250	2	585	835	13	2.4		385	4	785	1170	19	2.3	
10,001–20,000	70	0	80	150	2	4.1		80	0	130	210	3	3.6		90	0	230	320	5	3.2		175	1	415	590	9	2.6		325	3	655	980	15	2.3		520	6	980	1500	24	2.2	
20,001–50,000	75	0	80	155	2	4.0		80	0	135	215	3	3.6		95	0	300	395	6	2.9		250	2	490	740	11	2.4		340	3	910	1250	19	2.2		610	7	1410	2020	32	2.1	
50,001–100,000	75	0	80	155	2	4.0		85	0	180	265	4	3.3		170	1	380	550	8	2.6		275	2	700	975	14	2.2		420	4	1050	1470	22	2.1		770	9	1850	2620	41	2.0	

n_1 = Size of First Sample; n_2 = Size of Second Sample; entry of "All" indicates that each piece in lot is to be inspected.
c_1 = Allowable Defect Number for First Sample; c_2 = Allowable Defect Number for First and Second Samples Combined.
p_t = Lot Tolerance Per Cent Defective corresponding to a Consumer's Risk (P_C) = 0.10.

TABLE IV CONT'D: DOUBLE SAMPLING LOT INSPECTION TABLES—BASED ON STATED VALUES OF "AVERAGE OUTGOING QUALITY LIMIT"

TABLE DA-1.5

AVERAGE OUTGOING QUALITY LIMIT = 1.5%

Process Average %	0–.03							.04–.30							.31–.60							.61–.90							.91–1.20							1.21–1.50						
Lot Size	Trial 1		Trial 2				p_t %	Trial 1		Trial 2				p_t %	Trial 1		Trial 2				p_t %	Trial 1		Trial 2				p_t %	Trial 1		Trial 2				p_t %	Trial 1		Trial 2				p_t %
	n_1	c_1	n_2	n_1+n_2	c_2			n_1	c_1	n_2	n_1+n_2	c_2			n_1	c_1	n_2	n_1+n_2	c_2			n_1	c_1	n_2	n_1+n_2	c_2			n_1	c_1	n_2	n_1+n_2	c_2			n_1	c_1	n_2	n_1+n_2	c_2		
1–15	All	0	–	–	–	–		All	0	–	–	–	–		All	0	–	–	–	–		All	0	–	–	–	–		All	0	–	–	–	–		All	0	–	–	–	–	
16–50	16	0	–	–	–	11.6		16	0	–	–	–	11.6		16	0	–	–	–	11.6		16	0	–	–	–	11.6		16	0	–	–	–	11.6		16	0	–	–	–	11.6	
51–75	23	0	11	34	1	10.5		23	0	11	34	1	10.5		23	0	11	34	1	10.5		23	0	11	34	1	10.5		23	0	11	34	1	10.5		23	0	11	34	1	10.5	
76–100	26	0	14	40	1	9.4		26	0	14	40	1	9.4		26	0	14	40	1	9.4		26	0	14	40	1	9.4		26	0	14	40	1	9.4		26	0	14	40	1	9.4	
101–200	31	0	18	49	1	8.4		31	0	18	49	1	8.4		31	0	18	49	1	8.4		35	0	35	70	2	7.5		35	0	35	70	2	7.5		35	0	35	70	2	7.5	
201–300	33	0	22	55	1	8.0		33	0	22	55	1	8.0		38	0	37	75	2	7.0		38	0	37	75	2	7.0		38	0	37	75	2	7.0		40	0	60	100	3	6.6	
301–400	34	0	21	55	1	7.9		34	0	21	55	1	7.9		39	0	41	80	2	6.9		39	0	41	80	2	6.9		42	0	63	105	3	6.3		42	0	63	105	3	6.3	
401–500	35	0	20	55	1	7.8		35	0	20	55	1	7.8		39	0	46	85	2	6.9		44	0	71	115	3	6.1		44	0	71	115	3	6.1		46	0	94	140	4	5.8	
501–600	35	0	20	55	1	7.8		40	0	45	85	2	6.8		40	0	45	85	2	6.8		44	0	71	115	3	6.1		44	0	71	115	3	6.1		47	0	98	145	4	5.7	
601–800	35	0	20	55	1	7.8		41	0	49	90	2	6.7		46	0	74	120	3	6.0		46	0	74	120	3	6.0		49	0	101	150	4	5.6		85	1	125	210	6	5.0	
801–1000	36	0	19	55	1	7.8		42	0	48	90	2	6.5		47	0	78	125	3	5.9		47	0	78	125	3	5.9		50	0	105	155	4	5.5		90	1	125	215	6	4.9	
1001–2000	44	0	51	95	2	6.3		44	0	51	95	2	6.3		49	0	81	130	3	5.7		55	0	105	160	4	5.4		95	1	175	270	7	4.6		100	1	230	330	9	4.4	
2001–3000	45	0	50	95	2	6.2		45	0	50	95	2	6.2		55	0	110	165	4	5.3		100	1	145	245	6	4.6		110	1	255	365	9	4.1		155	2	345	500	13	3.9	
3001–4000	45	0	50	95	2	6.2		50	0	85	135	3	5.5		55	0	115	170	4	5.2		105	1	190	295	7	4.3		160	2	300	460	11	3.8		205	3	405	610	15	3.6	
4001–5000	45	0	50	95	2	6.2		50	0	85	135	3	5.5		55	0	120	175	4	5.1		105	1	190	295	7	4.3		165	2	340	505	12	3.7		250	4	480	730	18	3.5	
5001–7000	46	0	54	100	2	6.1		50	0	90	140	3	5.4		60	0	155	215	5	4.7		110	1	225	335	8	4.2		165	2	375	540	13	3.7		310	5	610	920	22	3.3	
7001–10,000	46	0	54	100	2	6.1		50	0	90	140	3	5.4		60	0	160	220	5	4.6		115	1	280	395	9	3.9		170	2	420	590	14	3.6		360	6	660	1020	24	3.2	
10,001–20,000	46	0	54	100	2	6.1		50	0	90	140	3	5.4		60	0	165	225	5	4.5		120	1	315	435	10	3.8		210	3	420	630	15	3.6		415	7	835	1250	29	3.1	
20,001–50,000	47	0	53	100	2	6.1		55	0	125	180	4	5.0		65	0	195	260	6	4.4		165	2	350	515	12	3.7		225	3	640	865	20	3.3		510	9	1130	1640	38	3.0	
50,001–100,000	47	0	53	100	2	6.1		55	0	130	185	4	4.9		115	1	235	350	8	4.0		175	2	440	615	14	3.5		275	4	725	1000	23	3.2		570	10	1400	1970	45	2.9	

TABLE DA-2

AVERAGE OUTGOING QUALITY LIMIT = 2.0%

Process Average %	0–.04							.05–.40							.41–.80							.81–1.20						
Lot Size	Trial 1		Trial 2				p_t %	Trial 1		Trial 2				p_t %	Trial 1		Trial 2				p_t %	Trial 1		Trial 2				p_t %
	n_1	c_1	n_2	n_1+n_2	c_2			n_1	c_1	n_2	n_1+n_2	c_2			n_1	c_1	n_2	n_1+n_2	c_2			n_1	c_1	n_2	n_1+n_2	c_2		
1–15	All	0	–	–	–	–		All	0	–	–	–	–		All	0	–	–	–	–		All	0	–	–	–	–	
16–50	14	0	–	–	–	13.6		14	0	–	–	–	13.6		14	0	–	–	–	13.6		14	0	–	–	–	13.6	
51–100	21	0	12	33	1	11.7		21	0	12	33	1	11.7		21	0	12	33	1	11.7		21	0	12	33	1	11.7	
101–200	24	0	13	37	1	11.0		24	0	13	37	1	11.0		24	0	13	37	1	11.0		27	0	28	55	2	9.6	
201–300	26	0	15	41	1	10.4		26	0	15	41	1	10.4		29	0	31	60	2	9.1		29	0	31	60	2	9.1	
301–400	26	0	16	42	1	10.3		26	0	16	42	1	10.3		30	0	35	65	2	9.0		33	0	52	85	3	8.2	
401–500	27	0	16	43	1	10.3		30	0	35	65	2	9.0		30	0	35	65	2	9.0		34	0	56	90	3	7.9	
501–600	27	0	16	43	1	10.3		31	0	34	65	2	8.9		35	0	55	90	3	7.9		35	0	55	90	3	7.9	
601–800	27	0	17	44	1	10.2		31	0	39	70	2	8.8		35	0	60	95	3	7.7		38	0	82	120	4	7.3	
801–1000	27	0	17	44	1	10.2		32	0	38	70	2	8.7		36	0	59	95	3	7.6		38	0	87	125	4	7.2	
1001–2000	33	0	37	70	2	8.5		33	0	37	70	2	8.5		37	0	63	100	3	7.5		43	0	112	155	5	6.5	
2001–3000	34	0	41	75	2	8.2		34	0	41	75	2	8.2		41	0	84	125	4	7.0		75	1	115	190	6	6.1	
3001–4000	34	0	41	75	2	8.2		38	0	62	100	3	7.3		41	0	89	130	4	6.9		80	1	140	220	7	5.8	
4001–5000	34	0	41	75	2	8.2		38	0	62	100	3	7.3		42	0	88	130	4	6.9		80	1	175	255	8	5.5	
5001–7000	35	0	40	75	2	8.1		38	0	62	100	3	7.3		44	0	116	160	5	6.4		85	1	205	290	9	5.3	
7001–10,000	35	0	40	75	2	8.1		38	0	62	100	3	7.3		45	0	115	160	5	6.3		85	1	210	295	9	5.2	
10,001–20,000	35	0	40	75	2	8.1		39	0	66	105	3	7.2		45	0	115	160	5	6.3		90	1	260	350	11	5.1	
20,001–50,000	35	0	40	75	2	8.1		43	0	92	135	4	6.6		47	0	148	195	6	6.0		130	2	300	430	13	4.7	
50,001–100,000	35	0	45	80	2	8.0		43	0	92	135	4	6.6		85	1	185	270	8	5.2		135	2	345	480	14	4.5	

Process Average %	1.21–1.60							1.61–2.00						
Lot Size	Trial 1		Trial 2				p_t %	Trial 1		Trial 2				p_t %
	n_1	c_1	n_2	n_1+n_2	c_2			n_1	c_1	n_2	n_1+n_2	c_2		
1–15	All	0	–	–	–	–		All	0	–	–	–	–	
16–50	14	0	–	–	–	13.6		14	0	–	–	–	13.6	
51–100	21	0	12	33	1	11.7		21	0	12	33	1	11.7	
101–200	27	0	28	55	2	9.6		27	0	28	55	2	9.6	
201–300	32	0	48	80	3	8.4		32	0	48	80	3	8.4	
301–400	33	0	52	85	3	8.2		36	0	69	105	4	7.6	
401–500	36	0	74	110	4	7.5		60	1	90	150	6	7.0	
501–600	37	0	78	115	4	7.4		65	1	95	160	6	6.8	
601–800	38	0	82	120	4	7.3		70	1	120	190	7	6.4	
801–1000	70	1	100	170	6	6.5		70	1	145	215	8	6.2	
1001–2000	80	1	160	240	8	5.8		110	2	205	315	11	5.5	
2001–3000	115	2	195	310	10	5.3		160	3	310	470	15	4.7	
3001–4000	120	2	255	375	12	5.0		235	5	415	650	20	4.3	
4001–5000	125	2	285	410	13	4.9		275	6	475	750	23	4.2	
5001–7000	125	2	320	445	14	4.8		280	6	575	855	26	4.1	
7001–10,000	165	3	335	500	15	4.5		320	7	645	965	29	4.0	
10,001–20,000	170	3	425	595	18	4.4		395	9	835	1230	37	3.9	
20,001–50,000	205	4	515	720	22	4.3		480	11	1090	1570	46	3.7	
50,001–100,000	250	5	615	865	26	4.1		580	13	1460	2040	58	3.5	

n_1 = Size of First Sample; n_2 = Size of Second Sample; entry of "All" indicates that each piece in lot is to be inspected.
c_1 = Allowable Defect Number for First Sample; c_2 = Allowable Defect Number for First and Second Samples Combined.
p_t = Lot Tolerance Per Cent Defective corresponding to a Consumer's Risk (P_C) = 0.10.

TABLE IV CONT'D: DOUBLE SAMPLING LOT INSPECTION TABLES—BASED ON STATED VALUES OF "AVERAGE OUTGOING QUALITY LIMIT"

TABLE DA-2.5

AVERAGE OUTGOING QUALITY LIMIT = 2.5%

Process Average %	0–.05						.06–.50						.51–1.00						1.01–1.50						1.51–2.00						2.01–2.50					
Lot Size	Trial 1		Trial 2			Pt %	Trial 1		Trial 2			Pt %	Trial 1		Trial 2			Pt %	Trial 1		Trial 2			Pt %	Trial 1		Trial 2			Pt %	Trial 1		Trial 2			Pt %
	n_1	c_1	n_2	n_1+n_2	c_2		n_1	c_1	n_2	n_1+n_2	c_2		n_1	c_1	n_2	n_1+n_2	c_2		n_1	c_1	n_2	n_1+n_2	c_2		n_1	c_1	n_2	n_1+n_2	c_2		n_1	c_1	n_2	n_1+n_2	c_2	
1–10	All	0	–	–	–	–	All	0	–	–	–	–	All	0	–	–	–	–	All	0	–	–	–	–	All	0	–	–	–	–	All	0	–	–	–	–
11–50	11	0	–	–	–	17.6	11	0	–	–	–	17.6	11	0	–	–	–	17.6	11	0	–	–	–	17.6	11	0	–	–	–	17.6	11	0	–	–	–	17.6
51–100	18	0	10	28	1	14.1	18	0	10	28	1	14.1	18	0	10	28	1	14.1	18	0	10	28	1	14.1	20	0	20	40	2	13.0	20	0	20	40	2	13.0
101–200	20	0	11	31	1	13.7	20	0	11	31	1	13.7	23	0	25	48	2	11.7	23	0	25	48	2	11.7	23	0	25	48	2	11.7	25	0	35	60	3	10.8
201–300	21	0	13	34	1	13.0	21	0	13	34	1	13.0	24	0	25	49	2	11.4	26	0	44	70	3	10.3	26	0	44	70	3	10.3	28	0	57	85	4	9.5
301–400	21	0	14	35	1	12.8	24	0	26	50	2	11.3	24	0	26	50	2	11.3	27	0	43	70	3	9.9	29	0	61	90	4	9.3	49	1	71	120	6	8.8
401–500	22	0	13	35	1	12.7	25	0	25	50	2	11.1	28	0	47	75	3	9.8	28	0	47	75	3	9.8	30	0	60	90	4	9.2	50	1	80	130	6	8.4
501–600	22	0	14	36	1	12.5	25	0	30	55	2	10.9	28	0	47	75	3	9.8	30	0	65	95	4	9.1	30	0	65	95	4	9.1	55	1	95	150	7	8.0
601–800	22	0	14	36	1	12.5	26	0	29	55	2	10.8	28	0	47	75	3	9.8	31	0	69	100	4	8.8	55	1	85	140	6	8.0	60	1	115	175	8	7.6
801–1000	26	0	29	55	2	10.8	26	0	29	55	2	10.8	29	0	46	75	3	9.6	32	0	68	100	4	8.7	60	1	100	160	7	7.8	85	2	120	205	9	7.2
1001–2000	27	0	33	60	2	10.5	27	0	33	60	2	10.5	33	0	72	105	4	8.3	60	1	90	150	6	7.6	65	1	150	215	9	7.0	95	2	210	305	13	6.5
2001–3000	27	0	33	60	2	10.5	30	0	50	80	3	9.3	33	0	72	105	4	8.3	65	1	115	180	7	7.2	90	2	170	260	11	6.8	125	3	265	390	16	6.0
3001–4000	27	0	33	60	2	10.5	31	0	49	80	3	9.1	33	0	77	110	4	8.2	65	1	140	205	8	6.8	95	2	205	300	12	6.4	185	5	350	535	21	5.5
4001–5000	27	0	33	60	2	10.5	31	0	49	80	3	9.1	36	0	94	130	5	7.6	70	1	160	230	9	6.5	100	2	255	355	14	6.0	220	6	410	630	24	5.2
5001–7000	28	0	32	60	2	10.3	31	0	49	80	3	9.1	36	0	94	130	5	7.7	75	1	190	265	10	6.2	130	3	265	395	15	5.7	255	7	495	750	28	5.0
7001–10,000	28	0	32	60	2	10.3	31	0	49	80	3	9.2	36	0	94	130	5	7.7	100	2	195	295	11	6.0	140	3	355	495	18	5.3	325	9	665	990	36	4.7
10,001–20,000	28	0	32	60	2	10.3	31	0	49	80	3	9.2	36	0	94	130	5	7.8	105	2	215	320	12	5.9	170	4	380	550	20	5.2	360	10	830	1190	43	4.6
20,001–50,000	28	0	32	60	2	10.3	33	0	87	120	4	7.7	70	1	145	215	8	6.6	105	2	245	350	13	5.8	205	5	485	690	25	5.0	415	11	1145	1560	54	4.3
50,001–100,000	28	0	37	65	2	10.2	33	0	92	125	4	7.6	70	1	170	240	9	6.4	110	2	295	405	15	5.6	245	6	610	855	30	4.7	510	14	1370	1880	65	4.2

TABLE DA-3

AVERAGE OUTGOING QUALITY LIMIT = 3.0%

Process Average %	0–.06							.07–.60							.61–1.20							1.21–1.80							1.81–2.40							2.41–3.00						
Lot Size	Trial 1		Trial 2				p_t %	Trial 1		Trial 2				p_t %	Trial 1		Trial 2				p_t %	Trial 1		Trial 2				p_t %	Trial 1		Trial 2				p_t %	Trial 1		Trial 2				p_t %
	n_1	c_1	n_2	n_1+n_2	c_2			n_1	c_1	n_2	n_1+n_2	c_2			n_1	c_1	n_2	n_1+n_2	c_2			n_1	c_1	n_2	n_1+n_2	c_2			n_1	c_1	n_2	n_1+n_2	c_2			n_1	c_1	n_2	n_1+n_2	c_2		
1–10	All	0	–	–	–	–	–	All	0	–	–	–	–	–	All	0	–	–	–	–	–	All	0	–	–	–	–	–	All	0	–	–	–	–	–	All	0	–	–	–	–	–
11–50	10	0	–	–	–	19.0		10	0	–	–	–	19.0		10	0	–	–	–	19.0		10	0	–	–	–	19.0		10	0	–	–	–	19.0		10	0	–	–	–	19.0	
51–100	16	0	9	25	1	16.4		16	0	9	25	1	16.4		16	0	9	25	1	16.4		17	0	17	34	2	15.8		17	0	17	34	2	15.8		17	0	17	34	2	15.8	
101–200	17	0	9	26	1	16.0		17	0	9	26	1	16.0		17	0	9	26	1	16.0		20	0	21	41	2	13.7		22	0	33	55	3	12.4		22	0	33	55	3	12.4	
201–300	18	0	10	28	1	15.5		18	0	10	28	1	15.5		21	0	23	44	2	13.3		23	0	37	60	3	12.0		23	0	37	60	3	12.0		24	0	51	75	4	11.1	
301–400	18	0	11	29	1	15.2		21	0	24	45	2	13.2		23	0	37	60	3	12.0		23	0	37	60	3	12.0		25	0	55	80	4	10.8		42	1	63	105	6	10.4	
401–500	18	0	11	29	1	15.2		21	0	25	46	2	13.0		24	0	36	60	3	11.7		24	0	36	60	3	11.7		25	0	55	80	4	10.8		46	1	79	125	7	9.7	
501–600	18	0	12	30	1	15.0		21	0	25	46	2	13.0		24	0	41	65	3	11.5		26	0	54	80	4	10.7		46	1	69	115	6	9.7		48	1	97	145	8	9.2	
601–800	21	0	25	46	2	13.0		21	0	25	46	2	13.0		24	0	41	65	3	11.5		26	0	54	80	4	10.7		49	1	81	130	7	9.4		50	1	115	165	9	8.9	
801–1000	21	0	26	47	2	12.8		21	0	26	47	2	12.8		25	0	40	65	3	11.4		27	0	58	85	4	10.3		49	1	86	135	7	9.2		70	2	120	190	10	8.4	
1001–2000	22	0	26	48	2	12.6		22	0	26	48	2	12.6		27	0	58	85	4	10.3		49	1	76	125	6	9.1		50	1	150	200	10	8.0		100	3	180	280	14	7.5	
2001–3000	22	0	26	48	2	12.6		25	0	40	65	3	11.4		28	0	62	90	4	10.0		50	1	95	145	7	8.7		80	2	165	245	12	7.6		130	4	260	390	19	6.9	
3001–4000	23	0	26	49	2	12.4		25	0	45	70	3	11.0		29	0	76	105	5	9.6		55	1	110	165	8	8.5		105	3	200	305	14	7.0		155	5	330	485	23	6.5	
4001–5000	23	0	26	49	2	12.4		26	0	44	70	3	11.0		30	0	75	105	5	9.5		60	1	135	195	9	7.8		110	3	225	335	15	6.7		215	7	390	605	27	6.0	
5001–7000	23	0	27	50	2	12.2		26	0	44	70	3	11.0		30	0	80	110	5	9.4		60	1	165	225	10	7.3		110	3	250	360	16	6.6		270	9	505	775	34	5.7	
7001–10,000	23	0	27	50	2	12.2		27	0	43	70	3	11.0		30	0	80	110	5	9.4		85	2	160	245	11	7.2		115	3	290	405	18	6.5		285	9	680	965	41	5.4	
10,001–20,000	23	0	27	50	2	12.2		27	0	43	70	3	11.0		31	0	94	125	6	9.2		85	2	180	265	12	7.2		140	4	315	455	20	6.3		315	10	805	1120	47	5.3	
20,001–50,000	23	0	27	50	2	12.2		28	0	67	95	4	9.7		55	1	120	175	8	8.0		85	2	205	290	13	7.0		170	5	420	590	26	6.0		390	13	940	1330	56	5.2	
50,001–100,000	23	0	27	50	2	12.2		31	0	84	115	5	9.0		60	1	140	200	9	7.6		90	2	245	335	15	6.8		200	6	505	705	30	5.7		445	15	1105	1550	65	5.1	

n_1 = Size of First Sample; n_2 = Size of Second Sample; entry of "All" indicates that each piece in lot is to be inspected.
c_1 = Allowable Defect Number for First Sample; c_2 = Allowable Defect Number for First and Second Samples Combined.
p_t = Lot Tolerance Per Cent Defective corresponding to a Consumer's Risk (P_C) = 0.10.

TABLE IV CONT'D: DOUBLE SAMPLING LOT INSPECTION TABLES—BASED ON STATED VALUES OF "AVERAGE OUTGOING QUALITY LIMIT"

TABLE DA-4

AVERAGE OUTGOING QUALITY LIMIT = 4.0%

Process Average %	0–.08							.09–.80							.81–1.60							1.61–2.40						
Lot Size	Trial 1		Trial 2				Pt %	Trial 1		Trial 2				Pt %	Trial 1		Trial 2				Pt %	Trial 1		Trial 2				Pt %
	n_1	c_1	n_2	n_1+n_2	c_2			n_1	c_1	n_2	n_1+n_2	c_2			n_1	c_1	n_2	n_1+n_2	c_2			n_1	c_1	n_2	n_1+n_2	c_2		
1–10	All	0	–	–	–	–		All	0	–	–	–	–		All	0	–	–	–	–		All	0	–	–	–	–	
11–50	8	0	–	–	–	23.0		8	0	–	–	–	23.0		8	0	–	–	–	23.0		8	0	–	–	–	23.0	
51–100	12	0	7	19	1	22.0		12	0	7	19	1	22.0		12	0	7	19	1	22.0		13	0	14	27	2	20.5	
101–200	13	0	8	21	1	21.0		13	0	8	21	1	21.0		15	0	17	32	2	18.0		16	0	26	42	3	16.5	
201–300	13	0	9	22	1	20.5		16	0	18	34	2	17.4		16	0	18	34	2	17.4		17	0	28	45	3	16.0	
301–400	14	0	8	22	1	20.0		16	0	19	35	2	17.0		18	0	28	46	3	15.5		19	0	41	60	4	14.3	
401–500	14	0	8	22	1	20.0		16	0	19	35	2	17.0		19	0	28	47	3	15.3		20	0	40	60	4	14.0	
501–600	16	0	19	35	2	17.0		16	0	19	35	2	17.0		19	0	29	48	3	15.1		20	0	45	65	4	13.8	
601–800	16	0	20	36	2	16.7		16	0	20	36	2	16.7		19	0	30	49	3	14.9		22	0	58	80	5	13.0	
801–1000	16	0	20	36	2	16.7		16	0	20	36	2	16.7		20	0	45	65	4	13.8		37	1	58	95	6	12.2	
1001–2000	17	0	19	36	2	16.6		19	0	31	50	3	14.8		21	0	44	65	4	13.6		39	1	71	110	7	11.5	
2001–3000	17	0	19	36	2	16.6		19	0	31	50	3	14.8		21	0	44	65	4	13.6		41	1	89	130	8	11.0	
3001–4000	17	0	20	37	2	16.5		19	0	31	50	3	14.8		22	0	58	80	5	13.0		43	1	102	145	9	10.5	
4001–5000	17	0	20	37	2	16.5		19	0	31	50	3	14.8		22	0	58	80	5	13.0		45	1	120	165	10	10.0	
5001–7000	17	0	20	37	2	16.5		19	0	31	50	3	14.8		22	0	58	80	5	13.0		65	2	120	185	11	9.6	
7001–10,000	17	0	20	37	2	16.5		19	0	36	55	3	14.6		23	0	57	80	5	12.7		65	2	140	205	12	9.3	
10,001–20,000	17	0	20	37	2	16.5		21	0	44	65	4	13.6		23	0	72	95	6	12.0		65	2	160	225	13	9.0	
20,001–50,000	17	0	20	37	2	16.5		21	0	44	65	4	13.6		43	1	92	135	8	10.6		70	2	175	245	14	8.8	
50,001–100,000	17	0	20	37	2	16.5		23	0	62	85	5	12.5		44	1	106	150	9	10.3		70	2	205	275	16	8.7	

Process Average %	2.41–3.20							3.21–4.00						
Lot Size	Trial 1		Trial 2				Pt %	Trial 1		Trial 2				Pt %
	n_1	c_1	n_2	n_1+n_2	c_2			n_1	c_1	n_2	n_1+n_2	c_2		
1–10	All	0	–	–	–	–		All	0	–	–	–	–	
11–50	8	0	–	–	–	23.0		8	0	–	–	–	23.0	
51–100	13	0	14	27	2	20.5		13	0	14	27	2	20.5	
101–200	16	0	26	42	3	16.5		16	0	26	42	3	16.5	
201–300	18	0	37	55	4	15.0		33	1	47	80	6	13.2	
301–400	19	0	41	60	4	14.3		35	1	60	95	7	12.8	
401–500	34	1	51	85	6	13.0		36	1	74	110	8	12.2	
501–600	37	1	63	100	7	12.2		50	2	75	125	9	11.6	
601–800	39	1	81	120	8	11.6		55	2	105	160	11	10.8	
801–1000	41	1	94	135	9	11.1		55	2	120	175	12	10.5	
1001–2000	55	2	110	165	11	10.6		80	3	165	245	16	9.5	
2001–3000	60	2	145	205	13	9.8		95	4	210	305	20	9.2	
3001–4000	80	3	160	240	15	9.4		115	5	250	365	23	8.8	
4001–5000	85	3	180	265	16	8.9		160	7	305	465	28	8.1	
5001–7000	85	3	200	285	17	8.7		210	9	450	660	38	7.4	
7001–10,000	90	3	230	320	19	8.5		235	10	550	785	44	7.1	
10,001–20,000	105	4	265	370	22	8.3		270	12	625	895	50	7.0	
20,001–50,000	125	5	315	440	26	8.1		295	13	725	1020	57	6.9	
50,001–100,000	150	6	385	535	31	7.7		335	15	845	1180	66	6.8	

TABLE DA-5

AVERAGE OUTGOING QUALITY LIMIT = 5.0%

Process Average %	0-.10						.11-1.00						1.01-2.00						2.01-3.00						3.01-4.00						4.01-5.00					
Lot Size	Trial 1		Trial 2			p_t %	Trial 1		Trial 2			p_t %	Trial 1		Trial 2			p_t %	Trial 1		Trial 2			p_t %	Trial 1		Trial 2			p_t %	Trial 1		Trial 2			p_t %
	n_1	c_1	n_2	n_1+n_2	c_2		n_1	c_1	n_2	n_1+n_2	c_2		n_1	c_1	n_2	n_1+n_2	c_2		n_1	c_1	n_2	n_1+n_2	c_2		n_1	c_1	n_2	n_1+n_2	c_2		n_1	c_1	n_2	n_1+n_2	c_2	
1-5	All	0	–	–	–	–	All	0	–	–	–	–	All	0	–	–	–	–	All	0	–	–	–	–	All	0	–	–	–	–	All	0	–	–	–	–
6-50	6	0	–	–	–	30.5	6	0	–	–	–	30.5	6	0	–	–	–	30.5	6	0	–	–	–	30.5	6	0	–	–	–	30.5	6	0	–	–	–	30.5
51-100	10	0	6	16	1	26.5	10	0	6	16	1	26.5	11	0	11	22	2	25.0	11	0	11	22	2	25.0	11	0	11	22	2	25.0	12	0	18	30	3	23.0
101-200	11	0	6	17	1	26.0	12	0	15	27	2	22.0	12	0	15	27	2	22.0	14	0	22	36	3	19.8	14	0	22	36	3	19.8	14	0	30	44	4	19.0
201-300	11	0	7	18	1	25.0	13	0	15	28	2	21.0	14	0	24	38	3	19.3	14	0	24	38	3	19.3	15	0	32	47	4	18.0	27	1	48	75	7	16.3
301-400	11	0	8	19	1	25.0	13	0	15	28	2	21.0	15	0	24	39	3	19.0	16	0	33	49	4	17.5	27	1	38	65	6	16.6	29	1	56	85	8	15.5
401-500	13	0	15	28	2	21.0	13	0	15	28	2	21.0	15	0	24	39	3	19.0	16	0	34	50	4	17.1	29	1	51	80	7	15.5	30	1	70	100	9	14.9
501-600	13	0	15	28	2	21.0	13	0	15	28	2	21.0	15	0	25	40	3	18.7	16	0	34	50	4	17.1	31	1	64	95	8	14.3	43	2	72	115	10	13.9
601-800	13	0	16	29	2	20.5	13	0	16	29	2	20.5	16	0	34	50	4	17.1	17	0	33	60	5	16.2	32	1	78	110	9	13.9	45	2	90	135	12	13.5
801-1000	13	0	16	29	2	20.5	13	0	16	29	2	20.5	16	0	34	50	4	17.1	30	1	45	75	6	15.0	45	2	75	120	10	13.3	60	3	110	170	14	12.4
1001-2000	13	0	16	29	2	20.5	15	0	25	40	3	18.7	17	0	33	50	4	17.1	31	1	59	90	7	14.5	50	2	100	150	12	12.7	75	4	160	235	19	11.5
2001-3000	13	0	16	29	2	21.0	15	0	26	41	3	18.4	17	0	48	65	5	15.5	32	1	68	100	8	14.0	50	2	130	180	14	12.0	95	5	185	280	22	11.0
3001-4000	14	0	15	29	2	21.0	15	0	26	41	3	18.4	18	0	47	65	5	15.5	34	1	81	115	9	13.5	65	3	135	200	15	11.3	95	5	255	350	27	10.5
4001-5000	14	0	16	30	2	20.5	16	0	25	41	3	18.0	18	0	47	65	5	15.5	35	1	95	130	10	13.0	70	3	155	225	17	11.0	130	7	260	390	29	10.0
5001-7000	14	0	16	30	2	20.5	16	0	26	42	3	18.0	18	0	47	65	5	15.5	50	2	90	140	11	12.5	70	3	185	255	19	10.7	160	9	355	515	38	9.5
7001-10,000	14	0	16	30	2	20.5	16	0	26	42	3	18.0	19	0	56	75	6	15.0	50	2	105	155	12	12.1	85	4	200	285	21	10.4	180	10	430	610	44	9.2
10,001-20,000	14	0	17	31	2	20.5	17	0	38	55	4	16.4	19	0	56	75	6	15.0	50	2	125	175	13	11.7	100	5	220	320	23	10.0	215	12	490	705	50	8.9
20,001-50,000	14	0	17	31	2	20.5	17	0	38	55	4	16.4	33	1	72	105	8	13.5	50	2	135	185	14	11.3	120	6	290	410	29	9.5	230	13	605	835	59	8.7
50,001-100,000	14	0	18	32	2	20.5	18	0	47	65	5	15.6	34	1	86	120	9	13.1	55	2	160	215	16	11.0	140	7	315	455	32	9.3	265	15	705	970	68	8.5

n_1 = Size of First Sample; n_2 = Size of Second Sample; entry of "All" indicates that each piece in lot is to be inspected.
c_1 = Allowable Defect Number for First Sample; c_2 = Allowable Defect Number for First and Second Samples Combined.
p_t = Lot Tolerance Per Cent Defective corresponding to a Consumer's Risk (P c) = 0.10.

TABLE IV CONT'D: DOUBLE SAMPLING LOT INSPECTION TABLES—BASED ON STATED VALUES OF "AVERAGE OUTGOING QUALITY LIMIT"

TABLE DA-7

AVERAGE OUTGOING QUALITY LIMIT = 7.0%

Process Average %	0–.14							.15–1.40							1.41–2.80						
Lot Size	Trial 1		Trial 2				Pt %	Trial 1		Trial 2				Pt %	Trial 1		Trial 2				Pt %
	n_1	c_1	n_2	n_1+n_2	c_2			n_1	c_1	n_2	n_1+n_2	c_2			n_1	c_1	n_2	n_1+n_2	c_2		
1–5	All	0	–	–	–		–	All	0	–	–	–		–	All	0	–	–	–		–
6–25	5	0	–	–	–		35.5	5	0	–	–	–		35.5	5	0	–	–	–		35.5
26–50	7	0	4	11	1		38.5	7	0	4	11	1		38.5	7	0	4	11	1		38.5
51–100	7	0	5	12	1		36.5	7	0	5	12	1		36.5	9	0	9	18	2		31.5
101–200	8	0	5	13	1		36.0	9	0	10	19	2		30.5	10	0	15	25	3		27.5
201–300	8	0	6	14	1		35.5	9	0	11	20	2		30.0	10	0	17	27	3		27.0
301–400	9	0	11	20	2		30.0	9	0	11	20	2		30.0	11	0	17	28	3		26.0
401–500	9	0	11	20	2		30.0	9	0	11	20	2		30.0	11	0	17	28	3		26.0
501–600	9	0	12	21	2		29.5	9	0	12	21	2		29.5	12	0	25	37	4		24.0
601–800	9	0	12	21	2		29.5	9	0	12	21	2		29.5	12	0	25	37	4		24.0
801–1000	9	0	12	21	2		29.5	11	0	18	29	3		25.5	12	0	25	37	4		24.0
1001–2000	10	0	11	21	2		29.0	11	0	18	29	3		25.5	12	0	25	37	4		24.0
2001–3000	10	0	11	21	2		29.0	11	0	19	30	3		25.5	13	0	34	47	5		21.5
3001–4000	10	0	11	21	2		29.0	11	0	19	30	3		25.5	13	0	34	47	5		21.5
4001–5000	10	0	11	21	2		29.0	11	0	19	30	3		25.5	13	0	35	48	5		21.5
5001–7000	10	0	12	22	2		28.5	11	0	19	30	3		26.0	14	0	46	60	6		20.0
7001–10,000	10	0	12	22	2		28.5	12	0	26	38	4		23.5	25	1	50	75	8		18.5
10,001–20,000	10	0	12	22	2		28.5	12	0	27	39	4		23.0	25	1	55	80	8		18.0
20,001–50,000	10	0	12	22	2		28.5	13	0	36	49	5		21.0	25	1	60	85	9		17.8
50,001–100,000	10	0	12	22	2		28.5	13	0	36	49	5		21.0	26	1	69	95	10		17.5

Process Average %	2.81–4.20							4.21–5.60							5.61–7.00						
Lot Size	Trial 1		Trial 2				Pt %	Trial 1		Trial 2				Pt %	Trial 1		Trial 2				Pt %
	n_1	c_1	n_2	n_1+n_2	c_2			n_1	c_1	n_2	n_1+n_2	c_2			n_1	c_1	n_2	n_1+n_2	c_2		
1–5	All	0	–	–	–		–	All	0	–	–	–		–	All	0	–	–	–		–
6–25	5	0	–	–	–		35.5	5	0	–	–	–		35.5	5	0	–	–	–		35.5
26–50	7	0	4	11	1		38.5	8	0	8	16	2		34.0	8	0	8	16	2		34.0
51–100	9	0	9	18	2		31.5	10	0	14	24	3		28.5	10	0	14	24	3		28.5
101–200	10	0	15	25	3		27.5	11	0	22	33	4		25.5	18	1	28	46	6		24.0
201–300	11	0	24	35	4		25.0	19	1	28	47	6		23.5	20	1	40	60	8		22.0
301–400	11	0	25	36	4		24.5	20	1	35	55	7		22.0	29	2	41	70	9		21.0
401–500	12	0	32	44	5		23.0	22	1	43	65	8		20.5	31	2	59	90	11		19.5
501–600	21	1	34	55	6		21.0	23	1	52	75	9		19.5	32	2	63	95	12		19.0
601–800	22	1	43	65	7		20.0	32	2	53	85	10		19.0	41	3	74	115	14		18.3
801–1000	23	1	42	65	7		19.8	33	2	62	95	11		18.4	43	3	82	125	15		17.5
1001–2000	23	1	47	70	8		19.2	34	2	81	115	13		17.8	55	4	115	170	20		16.5
2001–3000	24	1	56	80	9		18.7	44	3	91	135	15		17.0	65	5	135	200	23		16.0
3001–4000	24	1	66	90	10		18.2	47	3	103	150	16		16.0	75	6	175	250	28		15.0
4001–5000	26	1	74	100	11		17.7	50	3	135	185	19		15.0	100	8	225	325	35		14.0
5001–7000	37	2	78	115	12		16.5	65	4	155	220	22		14.0	115	9	265	380	40		13.5
7001–10,000	38	2	87	125	13		16.2	75	5	180	255	25		13.6	130	10	310	440	45		13.0
10,001–20,000	38	2	97	135	14		16.0	85	6	210	295	29		13.2	150	12	370	520	52		12.5
20,001–50,000	38	2	107	145	15		15.8	100	7	235	335	33		12.9	180	14	460	640	63		12.0
50,001–100,000	39	2	111	150	16		15.7	110	8	300	410	40		12.6	205	16	555	760	75		11.7

TABLE DA-10

AVERAGE OUTGOING QUALITY LIMIT = 10.0%

Process Average %	0–.20							.21–2.00							2.01–4.00						
Lot Size	Trial 1		Trial 2				p_t %	Trial 1		Trial 2				p_t %	Trial 1		Trial 2				p_t %
	n_1	c_1	n_2	n_1+n_2	c_2			n_1	c_1	n_2	n_1+n_2	c_2			n_1	c_1	n_2	n_1+n_2	c_2		
1–3	All	0	–	–	–		–	All	0	–	–	–		–	All	0	–	–	–		–
4–15	3	0	–	–	–		50.0	3	0	–	–	–		50.0	3	0	–	–	–		50.0
16–50	5	0	3	8	1		53.5	5	0	3	8	1		53.5	5	0	3	8	1		53.5
51–100	5	0	3	8	1		55.0	6	0	8	14	2		43.0	6	0	8	14	2		43.0
101–200	5	0	4	9	1		52.0	7	0	7	14	2		42.0	7	0	12	19	3		38.0
201–300	7	0	7	14	2		42.5	7	0	7	14	2		42.5	7	0	13	20	3		37.0
301–400	7	0	7	14	2		42.5	7	0	7	14	2		42.5	8	0	17	25	4		35.0
401–500	7	0	8	15	2		40.0	7	0	8	15	2		40.0	8	0	18	26	4		34.0
501–600	7	0	8	15	2		40.0	8	0	13	21	3		35.0	8	0	18	26	4		34.0
601–800	7	0	8	15	2		40.5	8	0	13	21	3		35.0	8	0	18	26	4		34.5
801–1000	7	0	8	15	2		40.5	8	0	13	21	3		35.0	9	0	18	27	4		33.0
1001–2000	7	0	8	15	2		40.5	8	0	14	22	3		34.0	9	0	23	32	5		31.0
2001–3000	7	0	8	15	2		41.0	8	0	14	22	3		34.0	9	0	24	33	5		30.0
3001–4000	7	0	8	15	2		41.0	8	0	14	22	3		34.5	9	0	24	33	5		30.5
4001–5000	7	0	8	15	2		41.0	8	0	14	22	3		35.0	10	0	29	39	6		29.5
5001–7000	7	0	8	15	2		41.0	9	0	18	27	4		32.5	16	1	29	45	7		28.5
7001–10,000	7	0	8	15	2		41.0	9	0	18	27	4		32.5	17	1	38	55	8		26.0
10,001–20,000	7	0	8	15	2		41.0	9	0	18	27	4		32.5	17	1	38	55	8		26.0
20,001–50,000	7	0	8	15	2		41.0	9	0	18	27	4		32.5	18	1	42	60	9		25.5
50,001–100,000	8	0	14	22	3		33.5	9	0	25	34	5		30.0	18	1	52	70	10		24.5

Process Average %	4.01–6.00							6.01–8.00							8.01–10.00						
Lot Size	Trial 1		Trial 2				p_t %	Trial 1		Trial 2				p_t %	Trial 1		Trial 2				p_t %
	n_1	c_1	n_2	n_1+n_2	c_2			n_1	c_1	n_2	n_1+n_2	c_2			n_1	c_1	n_2	n_1+n_2	c_2		
1–3	All	0	–	–	–		–	All	0	–	–	–		–	All	0	–	–	–		–
4–15	3	0	–	–	–		50.0	3	0	–	–	–		50.0	3	0	–	–	–		50.0
16–50	6	0	6	12	2		48.0	6	0	6	12	2		48.0	6	0	6	12	2		48.0
51–100	7	0	11	18	3		38.5	7	0	11	18	3		38.5	7	0	16	23	4		36.5
101–200	8	0	16	24	4		35.5	13	1	20	33	6		33.5	14	1	24	38	7		32.0
201–300	8	0	17	25	4		35.0	14	1	26	40	7		31.5	19	2	29	48	9		31.0
301–400	8	0	22	30	5		34.0	15	1	30	45	8		31.0	21	2	44	65	12		29.0
401–500	15	1	23	38	6		30.5	16	1	39	55	9		28.5	22	2	53	75	13		27.0
501–600	16	1	28	44	7		28.5	22	2	38	60	10		27.5	28	3	52	80	14		26.5
601–800	16	1	28	44	7		29.0	22	2	43	65	11		27.0	29	3	56	85	15		26.0
801–1000	16	1	34	50	8		28.0	24	2	56	80	13		25.5	36	4	69	105	18		24.5
1001–2000	17	1	38	55	9		27.5	24	2	61	85	14		25.0	45	5	95	140	23		23.0
2001–3000	17	1	48	65	10		26.0	33	3	72	105	16		23.0	50	6	115	165	27		22.0
3001–4000	24	2	46	70	11		25.0	41	4	99	140	21		21.5	70	8	150	220	34		20.5
4001–5000	26	2	54	80	12		23.5	44	4	111	155	22		20.0	80	9	195	275	41		19.0
5001–7000	27	2	63	90	13		22.5	50	5	120	170	24		19.5	90	10	240	330	47		18.0
7001–10,000	27	2	68	95	14		22.0	60	6	145	205	28		18.5	110	12	265	375	53		17.5
10,001–20,000	28	2	77	105	15		22.0	70	7	165	235	32		18.0	125	14	320	445	62		17.0
20,001–50,000	28	2	87	115	17		21.5	80	8	205	285	39		17.5	140	16	355	495	69		16.8
50,001–100,000	36	3	99	135	20		21.0	85	8	245	330	44		17.0	150	17	390	540	77		16.6

n_1 = Size of First Sample; n_2 = Size of Second Sample; entry of "All" indicates that each piece in lot is to be inspected.
c_1 = Allowable Defect Number for First Sample; c_2 = Allowable Defect Number for First and Second Samples Combined.
p_t = Lot Tolerance Per Cent Defective corresponding to a Consumer's Risk (P_C) = 0.10.